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Bulletin 217

The
Laurel Tradition
and the Middle
Woodland Period

By J. V. Wright

Canada 1967

Department of the
Secretary of State

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THE LAUREL TRADITION AND THE MIDDLE
WOODLAND PERIOD



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THE LAUREL TRADITION AND
THE MIDDLE WOODLAND PERIOD

by J. V. Wright ✓

Ottawa, 1967

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Preface

In the compilation of the present report, the writer has been most fortunate in receiving the unstinted assistance of a large number of people. Indeed, much of the information to be presented would have been unavailable without the ready cooperation of others. A particular expression of appreciation is extended to Mr. Walter A. Kenyon of the Royal Ontario Museum and to Dr. J. N. Emerson of the University of Toronto. The former's selfless permission to incorporate the material from the Rainy River area into the present study stands as a dominant factor in the formulation of a chronology for the Laurel Tradition in Northern Ontario. Similarly, Dr. Emerson rendered assistance in the excavation of the Heron Bay site and made available unpublished data on the Ault Park site of southeastern Southern Ontario. Dr. R. C. Dailey of the University of Toronto made available his material from the Quetico Park survey, and Mr. Clyde C. Kennedy of Deep River, Ontario, provided the writer with material and information from the Hynes site in the Ottawa Valley. In Manitoba, Dr. William J. Mayer-Oakes of the University of Manitoba kindly provided the writer with comparative data from the Grand Rapids area, and Mr. Walter M. Hlady of Winnipeg provided information on the distribution of Laurel ceramics in the northerly portion of the province.

A sincere expression of gratitude is extended to the Ontario Department of Lands and Forests who assisted in the field-work on a number of occasions, particularly with regard to the Killala Lake excavation, and to the Marathon Corporation who not only allowed the excavation of the Heron Bay site but also aided the work in many ways.

The able assistance in the field of Messrs. W. B. Rice, G. F. MacDonald, and J. M. Young is gratefully acknowledged. Their energy and ability represent an incalculable contribution to the present report.

The writer's sincere appreciation is extended to Dr. William A. Ritchie, New York State Museum and Science Service; Dr. William J. Mayer-Oakes, University of Manitoba; and Dr. W. E. Taylor, National Museum of Canada, for their reading of the manuscript and their valuable comments. The services of the following National Museum staff members are gratefully acknowledged: Dr. A. H. Clarke, Jr., for identification of the shells; Mr. P. M. Youngman for identification of the mammal remains; and Dr. D. E. McAllister for identification of the fish remains.

Finally, the writer must offer his apologies and trust to the forbearance of the individuals whose work he has reinterpreted or reanalysed in an attempt to resolve certain problems encountered in the study. Such adjustments were regarded as necessary in light of the increased body of data and the methods of analysis used and are certainly not intended as criticisms of the earlier workers.

October 28, 1964
Ottawa

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Résumé

On a pour la première fois employé l'expression «laurélien» pour qualifier les tertres tumulaires du Sylvicole moyen dans l'extrême nord du Minnesota. Bon nombre de ces tertres se trouvent le long de la frontière internationale que forme la rivière à la Pluie. M. Lloyd A. Wilford a établi le foyer laurélien comme foyer unique du milieu de la rivière à la Pluie (Wilford: 1943, 1955), d'après les fouilles aux tertres de Pike Bay. Smith 4 et McKinstry I. Ces tertres imposants variant de cinquante à quatre-vingt-trois pieds de diamètre et d'environ cinq pieds à huit pieds et demi de hauteur, étaient formés de couches superposées de vestiges de village et, en conséquence, étaient passablement riches en poteries et en objets façonnés. Le foyer laurélien ne se fonde donc pas uniquement sur les modes de sépulture que ces tertres ont révélés mais aussi sur l'analyse des vestiges qui constituaient ces tertres. Le seul autre complexe du Minnesota auquel le foyer laurélien semble étroitement apparenté est le foyer malmoyen du milieu des Mille lacs. Wilford considère ce foyer comme le produit préhistorique des Sioux et y voit aussi des rapports avec le foyer du lac Howard de la phase hopewellienne (1955, 134 et 135).

C'est M. Richard S. MacNeish, lors de son étude archéologique du sud-est du Manitoba (MacNeish: 1958), qui, le suivant, a fait un apport important à la tradition laurélienne. En cet endroit, toutefois, il n'y avait pas de tertres tumulaires et on a établi les deux nouveaux foyers de la tradition laurélienne soit le foyer Anderson et le foyer Nutimik, en se fondant sur les objets recouverts dans des gisements stratifiés ou d'un seul élément. On a aussi constaté que le foyer Nutimik était plus récent, du point de vue stratigraphique, que le foyer Anderson où l'on a trouvé les premières poteries découvertes dans la région. MacNeish a pensé (1958, 81 et 82) que les poteries lauréliennes et, peut-être, tout le complexe, avaient pénétré au Manitoba par l'est. Il lui a semblé aussi que les poteries, tout au moins, étaient venues d'Asie en passant par le littoral de l'Arctique et la côte ouest de la baie d'Hudson, dans le cadre de complexes du type Denbigh, pour éventuellement pénétrer dans l'Est de l'Amérique du Nord. En tant que telles, les manifestations lauréliennes du sud-est du Manitoba représentent un mouvement plus récent d'est en ouest d'un complexe du stade Sylvicole en partie d'origine asiatique.

M. W.A. Kenyon du *Royal Ontario Museum of Canada* s'occupe depuis un certain nombre d'années de l'étude des tertres tumulaires à la fois Sylvicole moyen et du Sylvicole supérieur dans la région de la rivière à la Pluie. On prévoit que ses travaux jetteront beaucoup de lumière sur la phase de construction de tertres de la tradition lauré-

lienne. Son rapport sur le gisement de Swan Lake (1961), qui a des éléments lauréliens, ajoute aussi à la liste des données relatives. De plus, M. Kenyon a fourni à l'auteur des échantillons de tessons provenant de deux complexes clés de la tradition laurélienne le long de la rivière à la Pluie.

Les propres recherches de l'auteur ont révélé la présence d'un certain nombre d'éléments lauréliens dans le nord de l'Ontario (Wright: 1963), surtout le long de la rive nord du lac Supérieur. Au cours des fouilles à un autre complexe du Sylvicole moyen (foyer Saugeen) dans le sud de l'Ontario, on a découvert des poteries et autres caractéristiques lauréliennes au sein même du foyer indigène (Wright et Anderson: 1963). Établie par la technique du carbone radio-actif, la date d'à peu près 500 av. J.-C. du foyer Saugeen au gisement Donaldson, où l'on a découvert des caractéristiques lauréliennes en association, représente aussi un âge estimatif pour une partie de la tradition laurélienne. On pense que la tradition laurélienne (milieu de la rivière à la Pluie) de l'Ouest et les foyers Saugeen et Point Peninsula 2 de l'Est sont génétiquement apparentés et que les deux complexes de l'Est sont en partie le produit de la tradition laurélienne d'origine asiatique (*ibid.*, 55).

MM. William J. Mayer-Oakes, James A. Brown et R.C. Dailey ont aussi contribué à l'intelligence de la tradition laurélienne. Dans la région de Pelican Narrows de la partie orientale du centre de la Saskatchewan, M. James A. Brown a fait l'excavation d'un gisement stratifié qui comprenait un élément de foyer Anderson (Brown: 1962). Au gisement à éléments multiples de Tailrace Bay, au confluent de la rivière Saskatchewan et du lac Winnipeg, M. William J. Mayer-Oakes de l'Université du Manitoba a sorti des poteries lauréliennes du dépôt mince et très mêlé. Il a eu la bienveillance de fournir à l'auteur des données relatives intéressant le gisement. M. R.C. Dailey de l'Université de Toronto a découvert une petite quantité de matière laurélienne au cours de son étude de la partie canadienne du parc Quetico dans le nord de l'Ontario, et il a permis à l'auteur d'analyser les spécimens.

Les renseignements relatifs à la tradition laurélienne sont présentement fort dispersés et pour la plupart n'ont pas fait l'objet de rapports complets. Cet état de chose a probablement pour cause l'aire fort étendue du complexe et son emplacement géographique septentrional dans une région relativement peu étudiée jusqu'à récemment. Les renseignements disponibles aujourd'hui semblent suffisants, toutefois, pour permettre un synthèse préliminaire. Vu que le complexe à l'étude se trouve dans les provinces d'Ontario, du Manitoba, de Québec et de la Saskatchewan ainsi que dans l'Etat du Minnesota et vu que, d'après certains indices, une longue période est en cause, toute synthèse à la présente étape de l'étude doit nécessairement se faire dans les termes les plus larges. La quantité et la qualité des renseignements relatifs à une région quelconque sont variables ce qui entraîne une présentation inégale des données. Ces lacunes de l'information ne sont pas, croyons-nous, d'ampleur suffisante pour rendre inutile la présente tentative de

former une image cohérente. Le rôle d'interprète du nord-est de l'Amérique du Nord qu'on attribue à ce complexe du Sylvicole moyen semble d'importance suffisante pour justifier certaines affirmations préliminaires.

En raison surtout de sa souplesse, nous avons utilisé le concept de la tradition pour ordonner les matières lauréliennes dont la répartition dans le temps et dans l'espace est très vaste. Un tel système permet de considérer les diverses variations de temps et d'espace de la tradition laurélienne comme parties intégrantes d'un tout et non comme unités isolées, semi-autonomes et vaguement apparentées de la nature des foyers. Jusqu'ici on ne connaît pas grand chose des stades d'évolution de la tradition, mais à mesure qu'on obtiendra plus de renseignements on pourra ajouter aux propositions faites ici et (ou) les modifier. En outre, en évitant d'utiliser les foyers, la nécessité de rejeter ces unités, lorsque des renseignements supplémentaires viennent en restreindre la fonction, disparaît. Bref, dans le cas particulier qui nous occupe, nous préférons la souplesse dans le temps et dans l'espace de la tradition aux catégories un peu paralysantes du système taxonomique du Midwest. De plus, en raison du caractère récent des recherches sur la tradition laurélienne et des caractéristiques inhérentes de la matière, nous préférons l'analyse des attributs à l'analyse typologique. Les dimensions dans le temps et dans l'espace de la tradition laurélienne, de l'avis de l'auteur, sont les unes et les autres trop vastes pour permettre que l'on s'appuie sur l'analyse typologique en ce moment. Plus tard, peut-être, lorsqu'on aura acquis des renseignements suffisants, sera-t-il possible de grouper en types, afin de faciliter et de vulgariser l'information, certaines tendances significatives et avérées des attributs. A ce stade de l'étude, toutefois, quand les tendances ne sont pas encore bien connues, l'établissement de groupes ou de types d'attributs pourrait non seulement restreindre la mesure d'interprétation mais aussi cacher des tendances importantes sous un certain nombre d'attributs relativement insignifiants. C'est pour cette raison que nous n'avons pas utilisé pour l'analyse les types de poteries des foyers Anderson et Nutimik décrits par MacNeish (1958, 142 à 156). L'avantage de l'analyse des attributs réside dans la réduction des données à leur dénominateur le plus simple, ce qui facilite la comparaison avec des données subséquentes. L'analyse des attributs permet aussi la vérification individuelle de ceux-ci en vue de déterminer leur valeur relative comme indicateurs de temps et d'espace. L'inconvénient de la technique réside dans l'énorme volume de données descriptives qu'il faut utiliser, ce qui nuit à l'information, spécialement de ceux qui ne s'intéressent pas directement à des problèmes précis. Comme nous l'avons déjà dit, nous espérons que l'information sera suffisante éventuellement. Pour permettre de réunir en genres bon nombre des attributs dont l'importance est démontrable et ainsi réduire sensiblement la quantité de données descriptives nécessaire pour démontrer la vérité d'une prémisse.

Afin de réduire les données relatives en une unité plus malléable, nous avons employé le coefficient de similarité (Brainerd: 1951). Le

coefficient de similarité réduit deux groupes de données comparables sur deux éléments à un seul coefficient. Pour établir ce coefficient, les pourcentages de fréquence des attributs comparables de deux éléments sont placés en regard les uns des autres. On soustrait ensuite l'un de l'autre les pourcentages de fréquence pour l'attribut correspondant de chaque gisement. Une fois terminée cette opération à l'égard de tous les attributs présents, on fait l'addition de la colonne des différences et on en soustrait le total de 200. Le coefficient qui en résulte constitue un état sommaire du rapport entre, d'une part, des éléments identiques qui, théoriquement, ont un coefficient de 200, et, d'autre part, des éléments complètement différents ayant un coefficient de zéro. Nous soulignons que la principale valeur du coefficient est de réduire un fort volume de données relatives en une seule unité qui traduit une certaine mesure de rapport.

On trouve au chapitre II des descriptions des gisements de la tradition laurélienne du nord de l'Ontario et l'analyse des objets façonnés. Vu que les données descriptives y abondent, le profane en trouvera presque certainement la lecture fastidieuse. A vrai dire, il est peu probable que le spécialiste qui s'intéresse à la question soit captivé. Cependant, de l'avis de l'auteur, ce chapitre constitue la partie principale du rapport. Il renferme les données élémentaires sur lesquelles les interprétations et les hypothèses se fondent. Nous avons aussi essayé de présenter une large part de ces données de façon suffisamment détaillée pour que le chercheur qui n'accepte pas bon nombre des interprétations puisse analyser de nouveau la matière en même temps que de nouvelles données et en venir à une conclusion différente. A ce propos, nous espérons que le chapitre descriptif constituera une source utile de données élémentaires pendant de nombreuses années, tandis que nous prévoyons que les conclusions et interprétations feront l'objet de modifications dans un avenir très prochain. La nature cumulative de la recherche archéologique fait que les conclusions sont d'une valeur bien éphémère. En outre, l'insuffisance des données descriptives peut nuire à la transition souhaitée vers une meilleure compréhension d'un problème.

Dans le chapitre des comparaisons, nous étudierons d'abord le rapport des éléments lauréliens du nord de l'Ontario et nous établirons une chronologie provisoire. Nous ferons ensuite des comparaisons avec les manifestations lauréliennes du Minnesota, du Manitoba et de la Saskatchewan. Nous étudierons aussi la relation génétique entre la tradition laurélienne et les foyers de Point Peninsula 2 et Saugeen du nord-est.

Dans un dernier chapitre, nous émettrons un certain nombre d'hypothèses et nous indiquerons sur quoi nous les appuyons. Il serait peut-être utile, toutefois, de présenter brièvement ces hypothèses ici afin qu'on puisse faire une appréciation plus complète de ce qui nous a amené à les formuler.

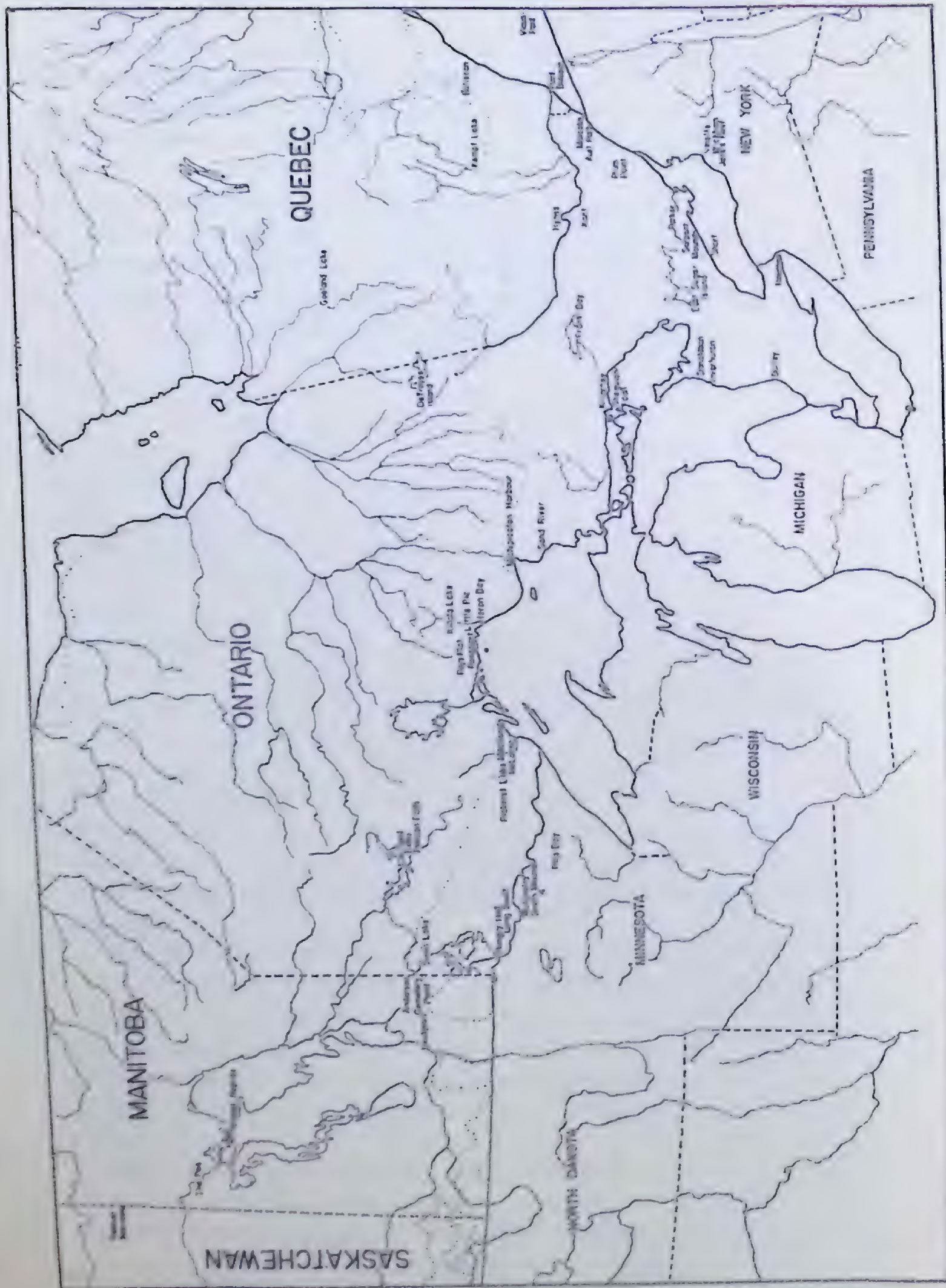
Premièrement, nous croyons que les poteries du Sylvicole inférieur venaient du Sud (Bullen: 1961; Wright: 1963) et qu'elles ne sont pas d'origine asiatique.

Deuxièmement, nous croyons que la tradition laurélienne est d'origine asiatique.

Troisièmement, nous estimons que l'aspect hopewellien est d'origine méridionale et non d'origine asiatique (Coe: 1960).

Et, quatrièmement, nous pensons que le foyer de Point Peninsula 2, le foyer Saugeen et les foyers apparentés qui s'étendent jusqu'à la côte est de l'Amérique du Nord sont le produit d'une fusion de deux complexes du Sylvicole moyen, dont l'un était d'origine asiatique (laurélien) et l'autre provenait du centre de l'hémisphère occidental (hopewellien).

Les hypothèses qui précèdent s'écartent des vues qui ont largement cours à l'heure actuelle sur les origines à la fois des poteries du Sylvicole inférieur et de celles du Sylvicole moyen. Elles représentent toutefois la seule interprétation logique que l'auteur puisse donner de la matière découverte dans l'Ontario et dans le nord-est en général.



MAP 1 — Location of components. The dotted lines demarcate the southern and northern boundaries of the Boreal Forest
(*Atlas of Canada, 1957*).

CHAPTER ONE

Introduction

The term 'Laurel' was first applied to Middle Woodland burial mounds in extreme northern Minnesota, many of which occur along the International Boundary formed by the Rainy River. Dr. Lloyd A. Wilford established the Laurel focus as the single focus of the Rainy River aspect (Wilford, 1943: 1955) on the basis of excavations at the Pike Bay, Smith 4, and McKinstry 1 mounds. These large mounds, which ranged from 50 feet to 83 feet in diameter and from approximately 5 feet to 8.5 feet in height, were constructed by successive layers of village debris and thus were quite rich in ceramics and other artifacts. The Laurel focus was, therefore, based not only upon the burial features encountered in the mounds but also upon the analysis of the village debris which made up the mounds. The only other complex in Minnesota to which the Laurel focus appears to be closely related is the Malmo focus of the Mille Lacs aspect. Wilford regards this latter focus as the prehistoric product of the Sioux, and he also sees relationships with the Howard Lake focus of the Hopewellian phase (1955, p. 134-135).

The next substantial contribution to the Laurel Tradition came from Dr. Richard S. MacNeish in his examination of the archaeology of southeast Manitoba (MacNeish, 1958). Here, however, burial mounds were lacking, and the two new Laurel Tradition foci of Anderson and Nutimik were established on the basis of material recovered from stratified and single component sites. The Nutimik focus was found to be stratigraphically later than the Anderson focus which possessed the first ceramics in the area. MacNeish speculated (1958, p. 81-82) that the Laurel ceramics and perhaps the entire complex entered Manitoba from the east, and that the ceramics, at least, diffused from Asia along the Arctic coast and down the west side of Hudson Bay in association with Denbigh-like complexes to enter eventually eastern North America. As such the Laurel manifestations in southeast Manitoba represent a later movement from the eastern Woodlands to the west of an, in part, Asiatic derived complex.

Mr. W. A. Kenyon of the Royal Ontario Museum of Canada has been involved for a number of years in the examination of both Middle Woodland and Late Woodland burial mounds in the Rainy River area. His research is expected to throw considerable light on the mound building phase of the Laurel Tradition. Kenyon's report on the Swan Lake site (1961), with its Laurel component, also adds to the list of comparative data. Mr. Kenyon has kindly made available to the writer sherd samples from two key Laurel components along the Rainy River.

The writer's own research has disclosed a number of Laurel components in Northern Ontario (Wright, 1963), particularly along the north shore of Lake Superior. During work on another Middle Woodland complex (Saugeen focus) in Southern Ontario, Laurel ceramics and other traits were found in

direct association with the indigenous assemblage (Wright and Anderson, 1963). The radiocarbon date of approximately 500 B.C. from the Saugeen focus Donaldson site, where the Laurel traits were found in association, also represents an age estimate for a portion of the Laurel Tradition. It was proposed that the Laurel Tradition (Rainy River aspect) of the west and the Saugeen and Point Peninsula foci of the east are genetically related and that the two eastern complexes are, in part, the product of the Asiatic derived Laurel Tradition (*ibid.*, p. 55).

Additional contributions to the understanding of the Laurel Tradition have been made by Dr. William J. Mayer-Oakes, Mr. James A. Brown, and Dr. R. C. Dailey. In the Pelican Narrows area of east-central Saskatchewan, Mr. James A. Brown excavated a stratified site which possessed an Anderson focus component (Brown, 1962). From the multi-component Tailrace Bay site at the confluence of the Saskatchewan River and Lake Winnipeg, Dr. William J. Mayer-Oakes of the University of Manitoba recovered Laurel ceramics from the thin and highly mixed deposit. He has kindly provided the writer with comparative data from the site. Dr. R. C. Dailey of the University of Toronto recovered a small amount of Laurel material during his survey of the Canadian portion of Quetico Park in Northern Ontario and has allowed the writer to analyse the specimens.

Information on the Laurel Tradition is in a widely scattered and, for the most part, incompletely reported-upon state. This situation probably reflects both the extensive area covered by the complex and its northern location in a, until recently, relatively unexamined region. The information now available, however, would appear to be sufficient to attempt a preliminary synthesis. As the complex under consideration is found in the provinces of Ontario,¹ Manitoba, and Saskatchewan, and in the state of Minnesota, and as there is evidence that a substantial time span is involved, any synthesis at this stage of investigation must, perforce, be presented in the most gross terms. The amount and quality of information from any one area is variable, thereby resulting in an erratic presentation of the data. Such limitations in the data, however, are not felt to be of sufficient magnitude to render useless the attempt to form a coherent picture. The inferred interpretational role of this Middle Woodland complex to northeastern North America would appear to be of sufficient importance to warrant certain premature statements.

Largely on account of its flexible nature, the tradition concept has been used in ordering the Laurel materials with their extensive spatial distribution and inferred time depth. Tradition, as used in this report, refers to the perpetuation of a common archaeological material culture through time which lacks major discontinuities in either sequential change or regional variation. Such a scheme allows the expression of the temporal and spatial variations of the Laurel Tradition as integrated parts of a whole, rather than as isolated, semi-autonomous, and vaguely related units such as foci. As yet, the temporal sequences involved in the tradition are poorly known, but with the increase of data the events proposed in this paper will be enlarged upon

¹It should be noted that the province of Ontario is divided into Northern Ontario and Southern Ontario by a boundary line following the French River, Lake Nipissing, and the Ottawa River. Cardinal directions are applied specifically to either Northern Ontario or Southern Ontario but not Ontario as a whole.

and/or modified. Also, by avoiding the use of foci, the necessity of discarding these units, when additional information limits their function, is resolved. In short, the flexibility in time and space of the tradition concept is favoured over the somewhat inhibiting categories of the Midwestern Taxonomic System. Further, because of the early stage of research on the Laurel Tradition and the inherent characteristics of the material, attribute analysis is favoured over typological analysis. The dimensions of both time and space in the Laurel Tradition are, in the writer's estimation, too broad to rely upon typological analysis at this stage. Later, perhaps, when sufficient information has been acquired, certain demonstrated significant attribute trends can be lumped into types for easier and grosser communication. At this stage of investigation, however, before the attribute trends are well known, the establishing of attribute clusters or types may not only limit the degree of interpretation but also bury significant attribute trends under a number of relatively insignificant attributes. It is for this reason that the pottery types of the Anderson and Nutimik foci as described by MacNeish (1958, p. 142-156) are not used in the analysis. The advantage of attribute analysis lies in its reduction of the data to their simplest denominator thereby allowing ready comparison with later data. It also permits the individual testing of attributes to determine their relative worth as time and space indicators. The disadvantage of the technique lies in the overwhelming mass of descriptive data involved which inhibits communication, especially to those not directly involved in the specific problems. As has already been stated, it is hoped that eventually the information will be sufficiently complete to lump many of the attributes with demonstrable significance into types, thereby markedly reducing the amount of descriptive data necessary to demonstrate a premise.

In an attempt to reduce the comparative data to a more manageable unit the coefficient of similarity is used (Brainerd, 1951). The coefficient of similarity reduces two bodies of comparable data from two components to a single coefficient. To arrive at the coefficient, the percentage frequencies of the comparable attributes from two components are aligned beside one another. The percentage frequencies for the corresponding attribute at each site are then subtracted from one another. When this is done for all of the attributes present, the column of differences is added and the total is subtracted from 200. The resulting coefficient is a crude statement of relationship with identical components, theoretically, having a coefficient of 200 and completely different components having a coefficient of 0. It is emphasized that the major value of the coefficient is its reduction of a large body of comparative data to a single unit that reflects a degree of relationship.

The following chapter contains the descriptions of the Laurel Tradition sites in Northern Ontario and the analysis of the artifacts. As a large body of descriptive data is involved, the general reader will almost certainly find the section extremely boring. Indeed, it is anticipated that the specialist interested in the problem will not be particularly stimulated. The chapter, however, in the writer's estimation, represents the major contribution of the report. It contains the raw data upon which the interpretations and speculations are based. And an attempt has been made by me to present much of the data in sufficient detail that a researcher, who does not accept many of the interpretations, can re-analyse the material in conjunction with new data and come to a different

conclusion. In this respect it is hoped that the descriptive chapter may be a useful source of raw data for years to come, whereas it is anticipated that the conclusions and interpretations will be subject to modification in the very near future. The cumulative nature of archaeological research relegates conclusions to a very transitory position. Insufficient descriptive data, however, can inhibit the desired transition to a more sophisticated understanding of a problem.

In the chapter on comparisons, the relationship of the Laurel components in Northern Ontario will be considered first, and a tentative chronology will be established. Then comparisons will be drawn with Laurel manifestations in Minnesota, Manitoba, and Saskatchewan. The genetic relationship of the Laurel Tradition to the Point Peninsula and Saugeen foci of the Northeast will also be considered. These latter foci have not been treated as traditions for a number of reasons. First, their apparent genetic involvement in indigenous Archaic and/or Early Woodland assemblages presents a variable which the definition of tradition, as used in this report, is unable to accommodate. Secondly, any major reorganization of the Point Peninsula and Saugeen foci would call for extensive research and analysis beyond the scope of the present study. And thirdly, there are severe limitations in the raw data, particularly with reference to the Saugeen focus.

In the concluding chapter, a number of hypotheses will be proposed together with supporting evidence. It is perhaps useful, however, that these hypotheses are briefly presented here in order that the lines of evidence responsible for their conception can be more fully evaluated.

First, it is proposed that Early Woodland ceramics were originally derived from the south (Bullen, 1961; Wright, 1963) and are not of Asiatic origin.

Secondly, it is proposed that the Laurel Tradition is of Asiatic origin.

Thirdly, it is proposed that the Hopewell Tradition¹ is of southern derivation and not of Asiatic origin (Coe, 1960).

And fourthly, it is proposed that the Point Peninsula 2 focus, Saugeen focus, and related foci which extend to the east coast of North America are the product of variable blending between two Middle Woodland complexes, one of which was derived from Asia (Laurel) and the other from the central region of the Western Hemisphere (Hopewell), being grafted onto an earlier indigenous cultural base.

The preceding proposals represent a deviation from the current views largely held on the origins of both Early Woodland and Middle Woodland ceramics. They represent, however, the only way that the writer can logically interpret the materials found in Ontario and the Northeast in general.

¹The term 'tradition' is applied to Hopewell in a much looser sense than is the case with Laurel. Indeed, it is used basically as a classificatory device for referring not only to the assemblages placed within a Hopewell culture or Hopewellian phase but also to ancestral assemblages such as the Central Basin phase. In a number of respects the co-tradition concept is probably more applicable to Hopewell than is the view of a single developing tradition.

CHAPTER TWO

Laurel Tradition Components in Northern Ontario

Surveys carried out by the writer in Northern Ontario from 1960 to 1963 disclosed a number of components assignable to the Laurel Tradition. Other Laurel sites in Northern Ontario have been found by Mr. W. A. Kenyon of the Royal Ontario Museum and Dr. R. C. Dailey of the University of Toronto. In addition, a small amount of pertinent material from the area resides in the collections of the National Museum of Canada. In the following pages the sites are examined individually with regard to general features and artifact descriptions. Including the descriptive data in the text, rather than placing it in an appendix form, has certain disadvantages. These disadvantages, however, are felt to be outweighed by the single advantage of having all the information pertaining to any one component organized into a single cohesive unit. Such an arrangement would appear to be most effective for comparative purposes at this very preliminary stage of examination of a tradition which possesses both extensive time depth and spatial distribution.

THE HERON BAY SITE (DdIn - 1)

The Heron Bay site, or DdIn - 1 as it is designated under the Borden system of site designation (Borden, 1952), was excavated to varying degrees

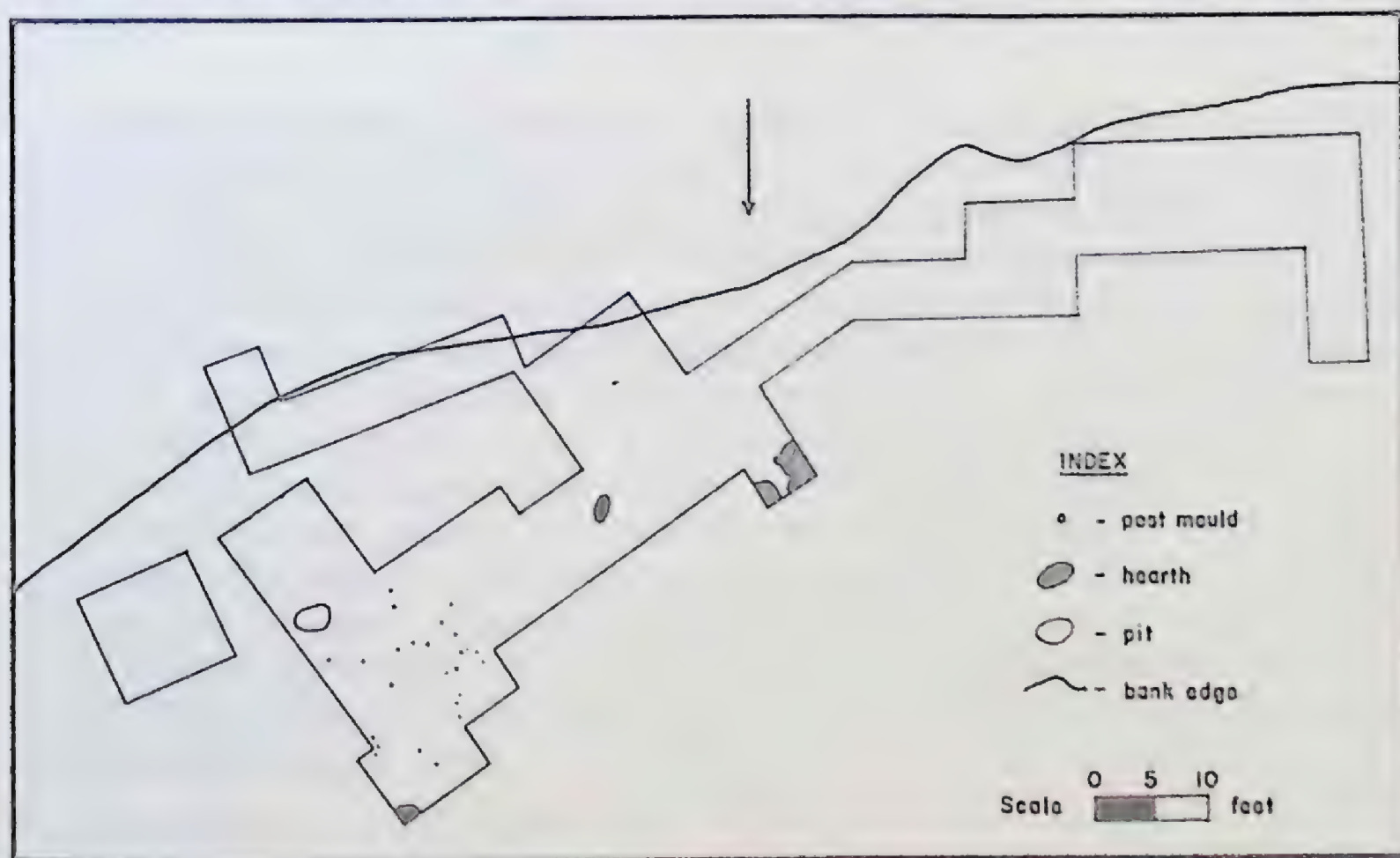


FIGURE 1—Floorplan of the Heron Bay site excavation

in the field seasons of 1960, 1961, and 1963. The excavated portion of the site is located on the west bank of the Pic River less than a mile from its embouchure into Lake Superior and is situated approximately one hundred yards north of the present river bank on a strandline elevated eight feet above the July river level. As Laurel materials are absent below the ancient shore line it is assumed that the site has been elevated by isostatic rebound and that the land area between the site and the present river was covered by water during the Laurel occupation. Evidence of occupation follows the river for nearly half a mile, although village debris thins out rapidly a short distance inland from the bank. Also, on the upriver portion of the site the old shore line joins the present, steeply eroded bank of the river.

The west side of the river, on which the site is located, consists of a broad, nearly flat sand plateau with relatively little overgrowth other than scattered stands of black spruce. This topography is in marked contrast to the east side of the river where the exposed rock of the Precambrian Shield is intersected by dense forest. During excavations, a test hole four feet deep was dug, but it produced only sterile, water-deposited sand.

Excavations were concentrated in one small area situated very close to the downriver termination point of the site. It was here that a thick cultural deposit, at least 200 feet in length and 30 feet in breadth, was located. The fact that the area was also occupied by a stand of large black spruce trees accounts for the somewhat erratic configuration of the excavation (Figure 1). Outside this area the remainder of the site is characterized by periodic thin deposits suggestive of individual camp-sites. As such, productive excavation was restricted to a very small portion of a site which covers approximately ten acres. The major area of the site possesses only a veneer of cultural debris with occasional small concentrations. Because of bank erosion, road exposure, and bulldozer activity, it was possible to make the preceding evaluation of the surface distribution of cultural remains at the site.

A variety of excavation techniques was used in order to obtain the greatest amount of material and to test the possibility of superpositional deposits. Initially, arbitrary 3-inch levels were maintained, but this method of control was soon changed to vertical and horizontal recording of all artifacts exclusive of body sherds. As excavation and preliminary analysis progressed, it became increasingly apparent that significant changes in artifact content and variety with depth were lacking. Therefore, towards the end of excavation only rim sherds and a few other artifact categories were recorded vertically and horizontally, and, for the most part, the deposit was excavated as a single component. Subsequent analysis has indicated no observable trends through time, and the mending of sherds and other artifacts has indicated a distribution of fragments from single items throughout the depth of the deposit. It is possible that the loose, sandy soil inhibited the possibility of superpositional deposits through the ease by which it is churned up. If a substantial time range exists within the deposit, it is not apparent in either the vertical control or the analysis.

The most commonly used excavation units were 10-foot by 5-foot sectors connected into trenches. This system was altered to accommodate obstacles

(trees) and convenience. Other excavation units consisted of 10-foot squares, 5-foot squares, and rectangular units of varying dimensions.

The stratigraphy of the excavated area was represented by five visually separable zones. First, a black to dark brown fibrous mat covered the surface. Secondly, a black sand deposit containing an abundance of roots and rootlets was encountered. It was in this deposit that a number of recent items of European manufacture (nails, spoon, scissors, glass, and so on) were encountered as well as a scattering of Late Woodland body sherds. An occasional clustering of Laurel material was also noted in the second stratum and is regarded as being extrusive from a lower deposit through the mechanism of tree-falls. The third deposit was a yellow sand, the surface of which was

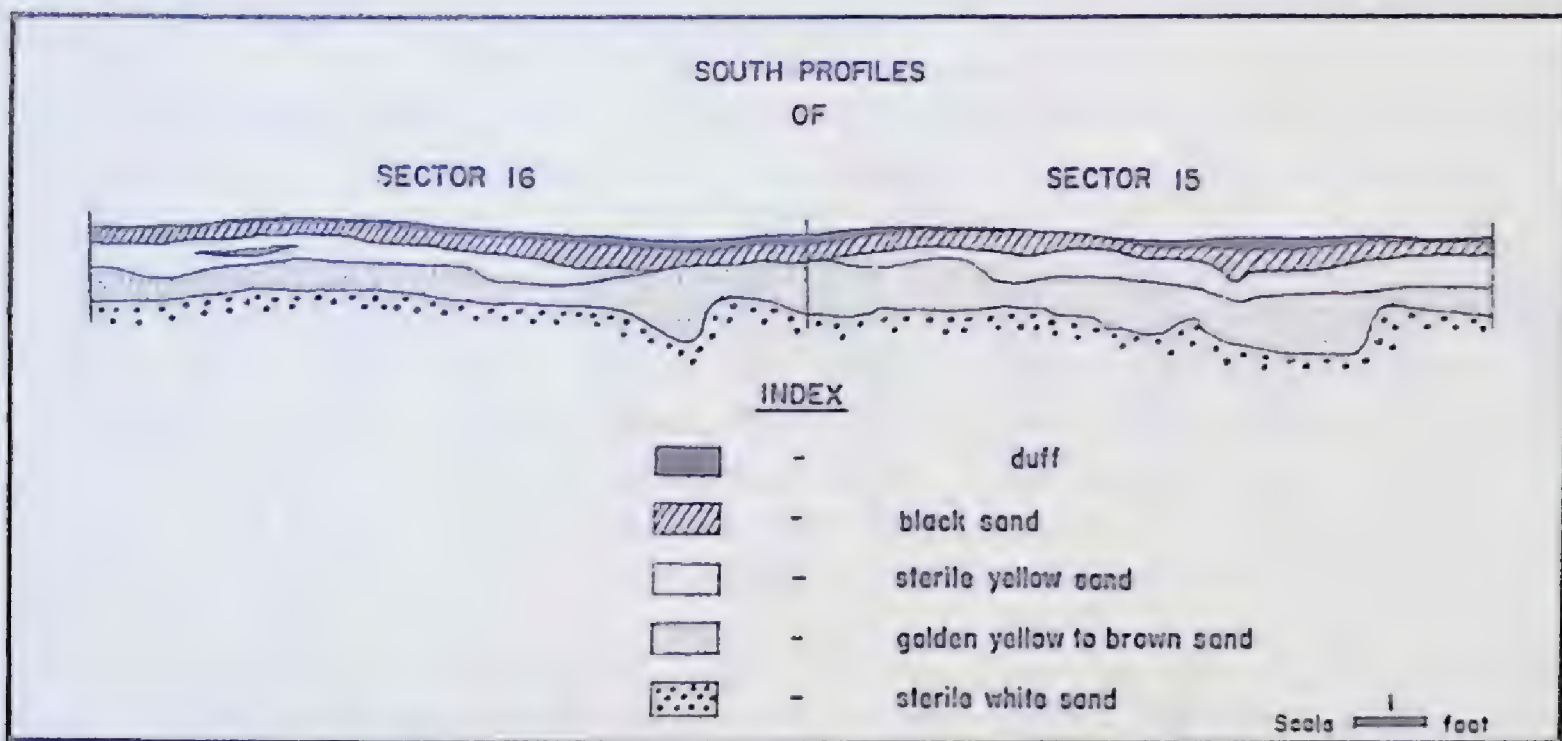


FIGURE 2—Typical profile from the Heron Bay site

covered with a thin lens of white to grey ashy soil, characteristic of a podzol. Archaeologically, this deposit is sterile to semi-sterile, and the occasional item that was found pertains to the following Laurel stratum. The generally continuous and relatively regular nature of this stratum suggests to the writer that it was deposited by water rather than by wind. Any structural evidence which may have been used to determine the agency of deposition was not apparent. The fourth deposit represents the major cultural stratum of the excavation. It appeared as a bright golden sand with sporadic areas of light to dark brown sand. Firestone fragments occurred throughout the deposit and rested directly on its surface with the result that large fragments frequently extended into the second and third strata. Directly under this stratum occurred a white, water-deposited sterile sand, the upper portion of which possessed some staining from the tree roots and possible leaching from the cultural deposit. A typical example of the stratigraphic situation at the site is illustrated in Figure 2.

The cultural deposit tended to be relatively uniform with regard to artifact production, and the materials from widely separated excavation units were generally similar in both quantity and variety. One condition of importance

was the variable degree of bone preservation found throughout the excavation. Bone preservation ranged from excellent to non-existent. In more than one instance a long section of rib or limb bone was recovered with one end excellently preserved and the other end reduced to punk and not recoverable. The extreme variation in bone preservation appears to have been determined by the ash content in the deposit. It is suggested that the sodas in the ash neutralized or reduced the natural acid soil, thus creating a correlation between ash distribution and bone preservation. Another feature commonly encountered in the excavation was tree-falls. These occurred on the horizontal as trianguloid pits containing mottled sands, certain lenses of which were sterile while others contained refuse. In cross-section the tree-fall depressions are trianguloid with one nearly vertical wall and the other at a fairly wide angle. The horizontal and vertical configurations of these features are identical with recent tree-falls in the area. As the tree falls, the root mass on the windward side rips out an area of soil while the roots on the leeward side remain in the ground forming a nearly vertical wall. One such feature, illustrated on Figure 1 as a pit, had been filled with black refuse which appeared to represent an intentional deposit. The mottled fill of the remaining six tree-falls may well be the result of a more gradual filling of the depressions.

Definite man-made features on the site consisted of four hearths and a clustering of twenty-five post moulds which may represent a house structure.

Relatively little appears to be significant about the hearths. They consist of a solid pavement of fire-fractured igneous and metamorphic rock which ranges from 3 inches to 5 inches in thickness. A certain amount of debris, especially flakes, was present in all the hearths. One hearth rested on a fire-reddened floor. The fact that charcoal was absent from all these features suggests that they originally were exposed to the winnowing effects of wind and water. Indeed, charcoal concentrations desirable for radiocarbon dating were unobtainable, although an abundance of carbonized bone was present. A small charcoal sample lacking association, which I submitted to the Geological Survey of Canada laboratory, gave an unacceptable reading of A.D. 610 ± 170 (GSC-208).

To re-create a house structure from the scattering of post moulds encountered in the eastern portion of the excavation is an exercise in fantasy. It is significant, however, that all the post moulds recognized are clustered in one small area of the excavation. All the posts were vertically set in the ground with the exception of one located due north of the pit which was angled to the west. Post diameters range from 2 inches to 7 inches with a mean of 3 inches, while post mould depths range from 6 inches to 17 inches with a mean of 9.9 inches. A roughly circular structure with a diameter of approximately 10 feet can be inferred from the post mould pattern. The post distribution, however, is too erratic to form a convincing structure, and the preceding is offered only as a possibility.

For the following examination of the artifacts it should be mentioned that the relatively few specimens collected from the surface of the site are included in the analysis. They did not differ in any marked respect from the excavated specimens. As such, the following descriptions appear to pertain to a single complex that either occupied the area for a short period or was

markedly resistant to internal and external forces which could result in significant cultural changes observable in the archaeological record.

CERAMIC ANALYSIS

RIM SHERDS

The main attribute used in segregating the 123 analysable rim sherds was decorative technique. Other attributes of the sherds and metrical data are considered within the category of decorative technique. The seriation of the rim sherds from the Heron Bay site is given in Table 1, and the rim profiles are illustrated in Figure 3. In the following descriptions, when only a geometric pattern is given, the technique involved is the technique category being considered.

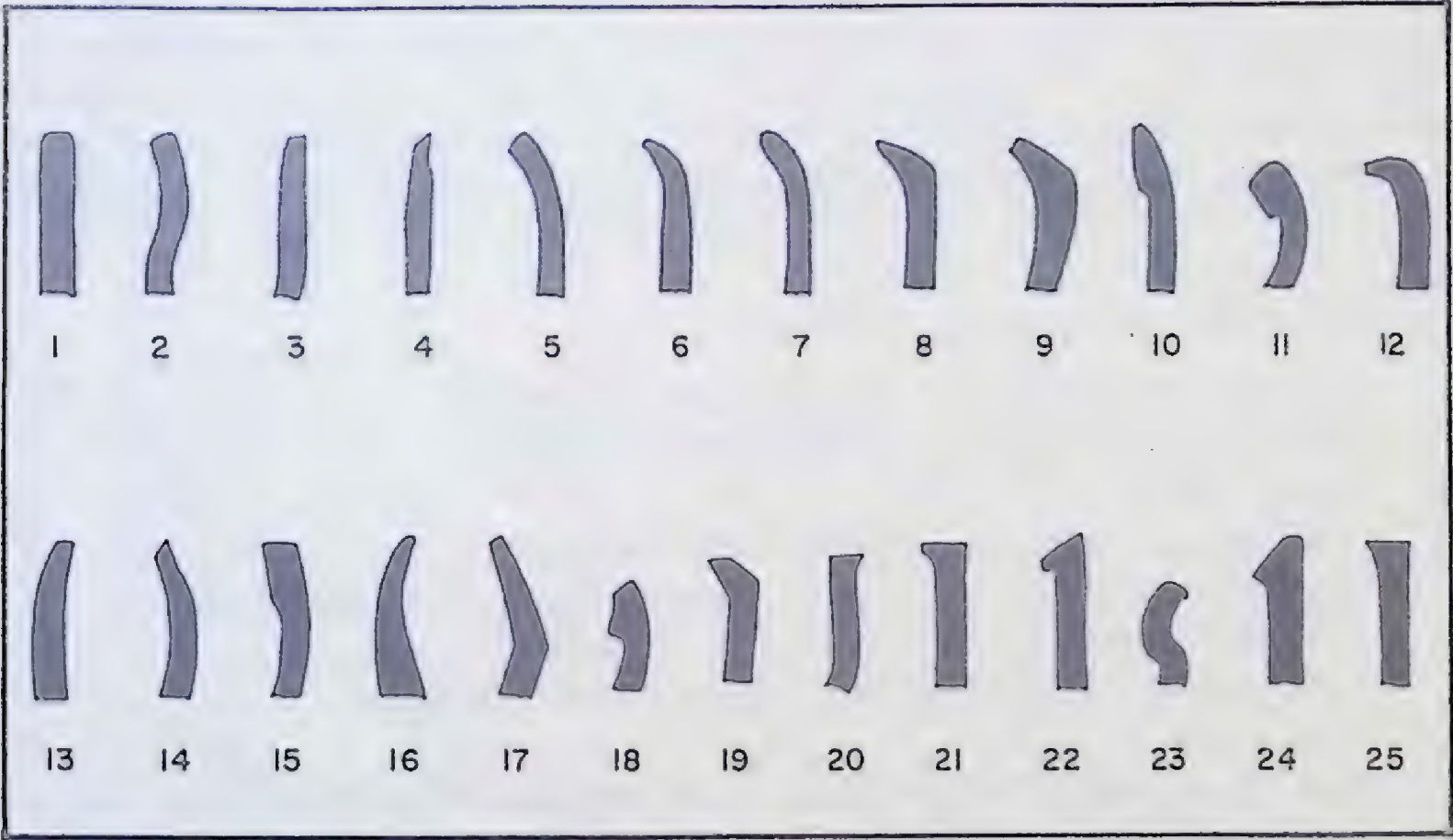


FIGURE 3—Rim profiles

Table 1—RIM SHERD CLASSIFICATION

Technique	f	%
Pseudo scallop shell	58	47.2
Dragged stamp	29	23.6
Linear punctate	7	5.7
Pseudo scallop shell and linear punctate	6	4.9
Dentate stamp	5	4.0
Pseudo scallop shell and dragged stamp	5	4.0
Dragged stamp and linear punctate	4	3.3
Punctate	2	1.6
Dentate stamp and pseudo scallop shell	2	1.6
Pseudo scallop shell, dragged stamp, and linear punctate	2	1.6
Miscellaneous	3	2.4
TOTAL	123	99.9

Pseudo Scallop Shell (Plate I, figs. 1 – 3)

Technique

Although a dentate stamp, the term ‘pseudo scallop shell’ is retained since the resulting impressions differ markedly from those generally referred to as dentate stamp. Both a stone and a bone implement have been recovered which produce the pseudo scallop shell impressions, and in both instances the tools are linear in shape with closely spaced notches on one or two of the thin symmetrically or asymmetrically bevelled edges. By impressing the edge laterally into the wet clay, the pseudo scallop shell impression is realized, and by impressing the same tool edge directly into the clay, a thin, linear dentate stamp is produced. That this latter technique is rarely encountered suggests the existence of a strong cultural control in the application of the tool. Though a number of varieties of pseudo scallop shell impressions exist, an attempt at separating these varieties was not successful. It was found that changing the angle of the lateral impressions slightly resulted in two varieties of pseudo scallop shell. Thus, it was not infrequent to find slightly different varieties of the technique on the same sherd. The same range of variation in this technique noted by Wilford (1952) is present on the Northern Ontario sites.

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques or verticals above horizontals	29
Two or more horizontal rows of short verticals	6
Horizontals	4
Two or more horizontal rows of short obliques	3
Notches on exterior corner of lip above obliques above horizontals ...	3
One row of verticals above one row of obliques	2
One row of verticals above horizontals above obliques	2
One row of verticals	2
Two or more horizontal rows of short verticals above horizontals ...	2
One row of short obliques above a row of long obliques	1
One row of short obliques above a row of short verticals above horizontals	1
Criss-cross above horizontals	1
Notches on exterior corner of lip above horizontals ..	1
Notches on exterior corner of lip above a row of verticals above horizontals and zones of short obliques	1
	58
<i>Lip decoration</i>	<i>f</i>
Absent	51
Obliques	4
Verticals	3
	58

<i>Interior decoration</i>	<i>f</i>
Absent	47
Verticals	6
Obliques	3
Destroyed	2
	—
	58

<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	36
Absent	12
Exterior (interior bosses)	3
Interior (exterior bosses)	3
Exterior multiple (no interior bosses)	2
Exterior and interior (alternating exterior and interior bosses)	1
Exterior, two spaced rows (no interior bosses)	1
	—
	58

<i>Punctate form</i>	<i>f</i>
Ovate	11
Ovate acuminate	8
Rectangular	7
Circular	6
Elliptical	4
Kidney	2
Semi-lunar	2
Triangular	1
	—
	41

Rim profiles

Rim profile varieties are illustrated in Figure 3. Frequencies of varieties within the pseudo scallop shell category were as follows: 1 form 1; 1 form 2; 2 form 3; 2 form 4; 28 form 5; 11 form 6; 5 form 7; 3 form 8; 1 form 9; 2 form 10; 1 form 11; and 1 form 12.

Red ochre wash on rim exterior and/or lip

Eight specimens possess evidence of a red ochre wash on the exterior rim and/or lip. The absence of ochre on the interior of sherds suggests that its presence on the rims is not accidental but probably decorative.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	57	2-6	4.1
Thickness 1 inch below lip	54	5-10	6.8
Distance of exterior punctates below lip	42	6-36	14.0
Distance between exterior punctates	40	2-10	4.8
Vertical length of exterior punctates	41	2-6	3.6

Dragged Stamp (Plate I, figs. 4 – 7)

Technique

This technique produces a complex pattern which frequently appears as ribbon-like bands. Experimentation with either the notched end of a stick or a portion of the edge of the same implement which produces the pseudo scallop shell impressions revealed that the pattern is produced by a toothed-stamp used in a push-and-pull fashion. The implement edge was impressed into the clay at an angle, dragged slightly, impressed, dragged, and so on. With relatively little practice, a symmetrical and rapidly executed design is possible. Where the end of an implement is used, an even depression, the width of the implement, is created with the bands separated by the higher ridges of the undecorated surface of the vessel. Where the corner edge of a tool is used, the depression is marked along the upper edge; it tapers into the undecorated vessel surface at the lower edge. This technique is described by Wilford (1952) as complex push-and-pull, and it appears to be the same technique found on the Vinette Complex Dentate pottery type of the Point Peninsula 2 focus (Ritchie and MacNeish, 1949).

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of vertical dragged stamp	10
Horizontal rows of oblique dragged stamp	10
Vertical rows of oblique dragged stamp above horizontal rows of oblique dragged stamp	3
Horizontal rows of oblique dragged stamp above oblique rows of oblique dragged stamp	1
One row of oblique dragged stamp above horizontal rows of oblique dragged stamp	1
Two horizontal rows of vertical dragged stamp above zones of horizontal and oblique rows of vertical dragged stamp	1
Vertical notching of exterior lip edge above horizontal rows of oblique dragged stamp	1
A short row of oblique dragged stamp above vertical rows of oblique dragged stamp	1
A short row of oblique dragged stamp above a blank space above horizontal rows of vertical dragged stamp	1
	—
	29
<i>Lip decoration</i>	<i>f</i>
Absent	24
Verticals	4
Obliques	1
	—
	29
<i>Interior decoration</i>	<i>f</i>
Absent	21
Obliques	5

Notching of lip edge	2
Verticals	1
	—
	29

<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	19
Exterior (interior bosses)	5
Absent	3
Exterior multiple (no interior bosses)	2
	—
	29

<i>Punctate form</i>	<i>f</i>
Rectangular	8
Ovate	6
Circular	5
Ovate acuminate	4
Semicircular	3
	—
	26

Rim profiles

Of the varieties of rim profiles illustrated in Figure 3 the following frequencies were present: 2 form 1; 2 form 3; 14 form 5; 7 form 6; 2 form 7; and 2 form 8.

Red ochre wash on exterior and/or lip

Four specimens possess a red ochre wash on the exterior rim and/or lip.

Metrical data

	f	Range (mm)	Mean (mm)
Lip thickness	29	2-6	4.0
Thickness 1 inch below lip	29	5-9	6.8
Distance of exterior punctates below lip	26	10-20	15.2
Distance between exterior punctates	25	3-10	5.3
Width of bands of dragged stamp	29	2-7	4.5
Vertical length of exterior punctates	25	2-7	4.0

Linear Punctate (Plate I, figs. 8, 9)

Technique

This technique is the same as that described under dragged stamp except that the implement lacks teeth. It is described by Wilford (1952) as simple push-and-pull. The two varieties of impressions noted in the dragged stamp technique, consisting of the impression of the entire end of an implement or just the corner edge, are both present.

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of vertical dragged punctates	2
One row of vertical dragged punctates above horizontal rows of oblique dragged punctates	2
Horizontal rows of oblique dragged punctates	1
One row of chevron above horizontal rows of oblique dragged punctates	1
Horizontal rows of oblique dragged punctates above oblique rows of vertical dragged punctates	1
	7
<i>Lip decoration</i>	<i>f</i>
Absent	6
Linear stamp verticals	1
	7
<i>Interior decoration</i>	<i>f</i>
Absent	7
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	6
Absent	1
	7
<i>Punctate form</i>	<i>f</i>
Ovate	2
Circular	1
Ovate acuminate	1
Elliptical	1
Rectangular	1
	6

Rim profiles

Rim profile varieties were represented by the following frequencies: 1 form 3; 3 form 5; and 3 form 6.

Red ochre wash on rim exterior and lip

One rim has an ochre wash on the exterior.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	7	3-5	4.0
Thickness 1 inch below lip	7	6-8	6.7
Distance of exterior punctates below lip	6	13-22	16.7
Distance between exterior punctates	6	3-9	5.7
Vertical length of exterior punctates	6	3-6	3.8

Pseudo Scallop Shell and Linear Punctate (Plate I, fig. 12)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Vertical or oblique pseudo scallop shell above horizontal linear punctate	6
<i>Lip and interior decoration</i>	<i>f</i>
Absent	6
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	6
<i>Punctate form</i>	<i>f</i>
Elliptical	3
Rectangular	2
Square	1
	—
	6

Rim profiles
 Rim profile varieties were represented by the following frequencies: 3 form 5; 2 form 6; and 1 form 7.

<i>Metrical data</i>			
	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	6	3-5	3.8
Thickness 1 inch below lip	6	6-8	6.7
Distance of exterior punctates below lip	6	13-16	13.8
Distance between exterior punctates	6	3-8	4.7
Vertical length of exterior punctates	6	3-8	4.5

Dentate Stamp (Plate I, figs. 10, 11)

Technique

Dentate stamp, in this paper, refers to the technique of impressing a toothed object into the clay, by means of which the individual tooth-marks are clearly impressed separate from one another. In the Laurel Tradition these impressions are generally small and closely spaced relative to other Middle Woodland ceramic complexes.

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques above horizontals	3
One row of verticals	1
One row of verticals above a row of obliques	1
	—
	5
<i>Lip decoration</i>	<i>f</i>
Absent	4
Obliques	1
	—
	5
	15

<i>Interior decoration</i>	<i>f</i>
Absent	5
<i>Form of tooth impressions</i>	<i>f</i>
Ovate	4
Rectangular	1
	—
	5
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	5
<i>Punctate form</i>	<i>f</i>
Ovate acuminate	4
Destroyed	1
	—
	5

Rim profiles

Rim profile varieties were represented by the following frequencies: 1 form 5; 1 form 6; and 3 form 7.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	5	3-6	4.8
Thickness 1 inch below lip	5	5-8	6.7
Distance of exterior punctates below lip	5	11-21	14.5
Distance between exterior punctates	4	2-8	4.0
Vertical length of exterior punctates	4	3-5	4.0
Length of individual dentate impressions	5	2-3	2.6

Pseudo Scallop Shell and Dragged Stamp (Plate I, fig. 13)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Three or more horizontal rows of dragged stamp above oblique pseudo scallop shell	2
Vertical or oblique pseudo scallop shell above horizontal rows of dragged stamp	2
One row of dragged stamp above horizontal pseudo scallop shell ..	1
	—
	5
<i>Lip decoration</i>	<i>f</i>
Absent	5
<i>Interior decoration</i>	<i>f</i>
Absent	4
One row of dragged stamp	1
	—
	5
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	5

<i>Punctate form</i>	<i>f</i>
Ovate acuminate	3
Rectangular	1
Triangular	1

Rim profiles

Rim profiles were represented by the following frequencies: 3 form 5; 1 form 6; and 1 form 7.

Red ochre wash on rim exterior and/or lip

Two examples of this attribute were noted.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	5	3-5	4.2
Thickness 1 inch below lip	5	4-9	6.8
Distance of exterior punctates below lip ..	5	14-18	16.2
Distance between exterior punctates	5	3-5	4.2
Vertical length of exterior punctates	5	3-6	4.0

Dragged Stamp and Linear Punctate (Plate I. fig. 14)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of vertical dragged stamp above horizontal linear punctate	4

<i>Lip and interior decoration</i>	<i>f</i>
Absent	4

<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	3
Exterior multiple (no interior bosses)	1

<i>Punctate form</i>	<i>f</i>
Ovate acuminate	2
Elliptical	1
Diamond	1

Rim profiles

Rim profile varieties were represented by 4 form 6.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	4	3-4	3.5
Thickness 1 inch below lip	4	6-7	6.5
Distance of exterior punctates below lip ..	4	11-18	15.8
Distance between exterior punctates	4	2-4	2.8
Vertical length of exterior punctates	4	3-5	4.0

Punctate (Plate I, fig. 15)

Technique

This technique consists of pushing a pointed object into the clay with little or no evidence of dragging the implement before making the next punctate. Of the two examples of punctating as an overall decorative technique one is of a triangular form and the other of a circular form. This category bears no relationship to the encircling row of punctates so common on Laurel ceramics.

<i>Motif exclusive of encircling row of punctates and bosses</i>	<i>f</i>
Horizontals	2
<i>Lip and interior decoration</i>	<i>f</i>
Absent	2
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	1
Absent	1
	2

Rim profiles

Rim profile varieties were represented by the following: 1 form 5; and 1 form 7.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	4
Thickness 1 inch below lip	4 and 7
Distance of single encircling row of exterior punctates below lip	19
Vertical length of exterior punctate	3

Dentate Stamp and Pseudo Scallop Shell (Plate I, fig. 16)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Vertical dentate stamp above horizontal pseudo scallop shell	2
<i>Lip and interior decoration</i>	<i>f</i>
Absent	2
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	2
<i>Punctate form</i>	<i>f</i>
Diamond	1
Rectangular	1
	2

Rim profiles

Rim profile varieties were represented by 2 form 6.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	3 and 4
Thickness 1 inch below lip	6 and 7
Distance of exterior punctates below lip	15 and 16

Distance between exterior punctates	4 and	5
Vertical length of exterior punctates		4

Pseudo Scallop Shell, Dragged Stamp, and Linear Punctate (Plate I, fig. 17)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Short, vertical pseudo scallop shell above oblique bands of oblique dragged stamp above horizontal linear punctate	2
<i>Lip decoration</i>	<i>f</i>
Absent	2
<i>Interior decoration</i>	<i>f</i>
Vertical pseudo scallop shell	2
<i>Punctates</i>	<i>f</i>
Exterior (no interior bosses)	2
<i>Punctate form</i>	<i>f</i>
Rectangular	2
<i>Rim profiles</i>	
Rim profiles consisted of 2 form 8.	

<i>Metrical data</i>	<i>mm</i>
Lip thickness	2
Thickness 1 inch below lip	7
Distance of exterior punctates below lip	19 and 12
Distance between exterior punctates	6
Vertical length of exterior punctates	5 and 6

Miscellaneous

Specimen 1—

Motif: Short pseudo scallop shell obliques above horizontal rows of circular punctates (Plate I, fig. 18).

Lip and interior decoration: absent

Rim profile: form 13

<i>Metrical data</i>	<i>mm</i>
Lip thickness	4
Thickness 1 inch below lip	6
Distance of exterior punctates below lip	8
Distance between exterior punctates	2
Vertical length of exterior punctates	3

Specimen 2—

Motif: Short pseudo scallop shell obliques above two horizontal lines of linear punctate above two horizontal rows of vertical dragged stamp above at least four horizontal lines of linear punctate.

Lip decoration: vertical pseudo scallop shell

Interior decoration: absent

Punctate: exterior (no interior bosses)

Punctate form: diamond

Rim profile: form 6

<i>Metrical data</i>	<i>mm</i>
Lip thickness	5
Thickness 1 inch below lip	8
Distance of exterior punctates below lip	11
Distance between exterior punctates	7
Vertical length of exterior punctates	8

Specimen 3—

Motif: Two rows of linear stamped obliques above horizontal rows of oblique dragged stamp.

Lip and interior decoration: absent

Rim profile: form 6

<i>Metrical data</i>	<i>mm</i>
Lip thickness	3
Thickness 1 inch below lip	4

Destroyed Rim Sherds

A large number of rim sherds were broken off a short distance below the lip and, therefore, could not be analysed for a number of attributes regarded as essential in the rim sherd analysis. Frequently the encircling line of punctates represented a zone of weakness, and many sherds were found to have broken along that line. Certain pertinent information, however, can still be drawn from these small rim sherd fragments. The available attributes are exterior technique and motif above the encircling punctates, lip decoration, interior decoration, and the incidence of a red ochre wash on the rim exterior and/or lip.

Table 2—EXTERIOR MOTIF AND TECHNIQUES OF DESTROYED RIM SHERDS

Technique	Motif							Totals
	Obliques	Verticals	Horizontals	Obliques or verticals above horizontals	Chevron	Punctates above horizontals	Horizontals super-imposed over horizontals	
Pseudo scallop shell	41	24	2	7	2	—	—	76
Dragged stamp	5	12	41	—	—	—	—	58
Linear punctate	—	4	18	—	—	—	—	22
Dentate stamp	1	4	1	—	—	—	—	6
Incised	2	4	—	—	—	—	—	6
Punctate	—	—	5	—	—	—	—	5
Combined techniques	—	—	—	2	—	1	1	4
TOTALS	49	48	67	9	2	1	1	177

Table 3—LIP AND INTERIOR TREATMENT OF DESTROYED RIM SHERDS*

Rim area	Treatment									Totals
	Plain	Oblique pseudo scallop shell	Vertical pseudo scallop shell	Dragged stamp	Notched lip edge	Punctate	Vertical dentate	Linear punctate	Destroyed	
Lip	193	15	12	1	—	8	1	—	—	230
Interior	164	20	8	16	14	2	—	1	5	230
TOTALS	357	35	20	17	14	10	1	1	5	460

*A red ochre wash occurs on the exterior and/or lip of 10 of the 230 specimens.

Encircling Punctate and Concave Exterior Sherds

The average Laurel Tradition vessel does not appear to possess a marked throat or neck area. A number of sherds, however, which were located a short distance below the mouth of the vessel, could be separated from the body sherd grouping on the bases of encircling punctates (Plate II, figs. 1 – 7) and/or a concave exterior. In most instances the vessel area corresponding to the neck is straight to convex with the final one to two inches below the lip slightly bent to form the everted rim profile. Thus, a sherd which was located very close to the lip but which lacked the encircling punctates or the beginnings of the everted rim could not be distinguished from a sherd much lower on the body. As such, it is recognized that the sherd sample under consideration is incomplete and that a number of corresponding sherds have been included in the body sherd analysis. Since the two attributes of punctating and curvature, however, allow the effective separation of sherds from this area of the vessel, it is felt that they should be examined separately from the category of body sherds. Both the form and motif of this area of the vessel may possess significance in tracing the developments of Laurel ceramics.

Table 4—PROFILES OF SHERDS FROM NEAR THE RIM AREA

Exterior to interior configuration	Punctated sherds	Non-punctated sherds	Totals
Concave – Convex	89	54	143
Straight – Straight	46	—	46
Convex – Concave	6	—	6
TOTALS	141	54	195

It was noted that in the majority of observable cases the eversion of the upper rim began at the encircling line of punctates. It should also be stated that the profile configuration data given above have undoubtedly been affected by sherd size and, therefore, are only relatively accurate.

Table 5—EXTERIOR MOTIF AND TECHNIQUE OF SHERDS* FROM NEAR THE RIM AREA

Technique	Motif							Totals
	Horizontals	Verticals or obliques above horizontals	Horizontal rows of short verticals or obliques	Obliques or verticals	Horizontals and obliques	Chevron	Criss-cross	
Pseudo scallop shell	51	14	5	11	2	1	—	84
Dragged stamp	43	2	—	15	2	—	—	62
Linear punctate	18	3	—	9	—	—	—	30
Punctate	6	—	—	—	—	—	—	6
Dentate	3	1	—	—	—	—	—	4
Pseudo scallop shell and dragged stamp	4	—	—	—	1	—	—	5
Dragged stamp and linear punctate	2	—	—	—	—	—	—	2
Incised	—	—	—	—	—	—	2	2
TOTALS	127	20	5	35	5	1	2	195

*The sherds range from 4 mm to 12 mm in thickness with a mean of 7.2 mm. One sherd possesses a red ochre wash on the exterior.

BODY SHERDS

Plain

Little can be said about these sherds other than to note that the exteriors and interiors are, for the most part, carefully smoothed.

Pseudo Scallop Shell (Plate II, figs. 8 – 10)

The pseudo scallop shell body sherds were divided into two groups consisting of sherds with overall decoration and sherds partially decorated with the remaining area plain. This last grouping is regarded as sherds from that portion of the vessel where the decoration terminates (Plate II, figs. 14, 15).

Motifs on the overall decorated sherds consist of the following:

Continuous lines	281
Bands of short obliques or verticals	31
Combinations of the preceding	17

329

The width of the bands of short obliques or verticals ranges from 4 mm to 15 mm with a mean of 8.0 mm.

Motifs on the partially decorated body sherds consist of the following:

Obliques or verticals	21
Obliques or verticals below horizontals	19
Horizontals	7

Obliques above horizontals above obliques	1
Horizontals above punctates	1
	49

The thickness of the sherds from the lower portion of the vessel ranges from 4 mm to 12 mm with a mean of 7.6 mm.

Dragged Stamp (Plate II, figs. 11 – 13)

The technique of producing this pattern has been discussed under rim sherds. Seventeen sherds possess an undecorated portion which appears to represent the area of the vessel where the decoration terminated. On all these sherds the bands are oriented horizontally. On the majority of the sherds, which were completely decorated, the orientation of the bands could not be accurately quantified. Width of bands ranges from 3 mm to 12 mm with a mean of 5.3 mm, and the thickness of the 17 specimens with terminal decoration ranges from 5 mm to 12 mm with a mean of 7.6 mm.

Linear Punctate (Plate III, figs. 1, 2)

The linear punctate sherds were also divided into completely decorated specimens and specimens having terminal decoration. Only the latter sherds could be segregated into motifs since a correct orientation was possible. These motifs consist of the following:

Horizontals	10
Obliques	2
Obliques above horizontals	1
	13

Thickness of the lower sherds ranges from 5 mm to 12 mm with a mean of 7.7 mm.

Dentate Stamped (Plate III, figs. 3, 4)

Eight of these specimens are partially plain indicating that they represent the area on the vessel where the decoration terminated. The decorative motif consists of the following:

Horizontals	5
Obliques	2
Obliques below horizontals	1
	8

Thickness of these sherds ranges from 6 mm to 10 mm with a mean of 8.0 mm.

Combined Techniques (Plate II, fig. 16)

This catch-all category is represented by the following combinations of techniques:

Linear punctate and pseudo scallop shell	7
Dragged stamp and pseudo scallop shell	6

Dragged stamp and punctate	6
Linear punctate and punctate	5
Dragged stamp and linear punctate	3
Incised and pseudo scallop shell	2
Incised and dragged stamp	2
Incised and linear punctate	1
Dentate stamped and punctate	1
Dentate stamped and dragged stamp	1
Dentate stamped and pseudo scallop shell	1
Pseudo scallop shell, dragged stamp, and linear punctate	1
	36

On six specimens the termination of the decorative elements was noted.

Rocker Stamped (Plate III, fig. 7)

Two of the specimens have an associated pseudo scallop shell motif, and all of the rocker stamp is executed with the pseudo scallop shell implement.

Incised (Plate III, fig. 9)

The incising of the sherds was generally deep and narrow as if executed with a sharp-edged implement. Where coil breaks allowed orientation the motif was vertical to slightly oblique.

Punctated (Plate III, figs. 5, 6)

Eight of the specimens have terminal decoration although motifs could not be recognized.

Channelled Exterior (Plate III, fig. 8)

The marking on the exterior of the sherds is very similar to the interior channelling prevalent on Point Peninsula foci ceramics to the east. The lines are parallel, broad, and shallow, and appear to be the result of a toothed implement dragged lightly across the surface of the vessel. It is significant that such channelling appears to be absent on the interior of Laurel ceramics.

Saugeen Focus (Plate III, fig. 11)

The five sherds under consideration appear to be attributable to the Saugeen focus of southwestern Southern Ontario (Wright and Anderson, 1963). All these sherds appear to belong to the same vessel although they were widely scattered in the excavation. The technique is an extremely crude pseudo scallop shell on a thick, porous paste containing many temper particles from 8 mm to 10 mm in length. The mean thickness of the sherds (9.6 mm) compares closely with thickness measurements on Saugeen focus ceramics.

Cord Malleated

This single specimen is similar in every respect to scattered Late Woodland body sherds found in the overlying black sand stratum along with historic

items, and there is a great likelihood that the sherd pertains to the later deposit.

Vinette 1 (Plate III, fig. 10)

A single neck sherd of the Vinette 1 pottery type of Early Woodland (Ritchie and MacNeish, 1949: 100) was recovered. It possesses the characteristic vertical cord impressions on the exterior and horizontal cord impressions on the interior. Both this sherd and the Saugeen focus sherds are interpreted as evidence of contact between the Laurel Tradition peoples of the Heron Bay site and contemporaneous complexes to the east.

BASAL SHERDS (Plate III, figs. 16, 17)

All the basal sherds are conoidal in shape and lack decoration. In four observable cases the exterior wall of the base is concave between the tip of the vessel and the upper portion of the base. Thus, if a straight edge is placed in such a fashion as to extend from the point of the vessel towards the rim, a space is apparent a short distance above the tip. Wall thickness, measured two inches above the tip, ranges from 7 mm to 10 mm with a mean of 8.9 mm as opposed to the thickness of the basal tip from its interior corresponding point of 11 mm to 23 mm with a mean of 13.0 mm.

Table 6—BODY SHERD CLASSIFICATION

Category	f	%	Red ochre wash on exterior	Thickness (mm)	
				Range	Mean
Plain	1,100	51.4	4	4-13	7.2
Pseudo scallop shell	378	17.6	3	4-12	7.4
Dragged stamp	302	14.1	3	5-13	7.6
Linear punctate	177	8.3	1	4-12	7.5
Dentate stamped	65	3.0	-	5-11	7.0
Combined techniques	36	1.7	-	4-11	7.2
Incised	21	1.0	-	6-9	7.5
Punctated	20	.9	-	6-9	7.1
Channelled exterior	16	.7	-	5-10	7.4
Rocker stamped	5	.2	-	5-8	7.2
Saugeen focus	5	.2	-	8-10	9.6
Cord malleated	1	.1	-	-	6.0
Vinette 1	1	.1	-	-	8.0
Basal sherds	15	.7	-	11-23	13.0
TOTALS	2,142	100.0	11		

PASTE ATTRIBUTES

Temper. Size and quantity of tempering material shows a wide range of variation. Generally, the grit particles are less than 2 mm in diameter and are widely scattered in the clay. Particles are rarely visible on either the exterior or interior surfaces of the sherd.

Manufacture. The fact that coil breaks are extremely common suggests that the bind between two coils was definitely a point of weakness in the vessel. Quite frequently the interior edge of the superior coil face was smeared up-

wards over the interior edge of the adjoining inferior coil face leaving a definite interior flange when broken away. Also, four sherds were found with the superior coil face notched, possibly to strengthen the bind of the two coils by the simple formation of a mortice and tenon union (Plate III, fig. 18). Most of the coil breaks, however, were normal with the superior coil edge convex and the associated inferior coil edge concave.

Texture. As a rule the sherds are well knit and smooth to the touch with little evidence of flaking or crumbling.

Colour. Sherds are normally buff on the exterior and range from buff to black on the interior.

JUVENILE CERAMICS

Forty-nine fragments of juvenile vessels were recovered from the site (Plate III, figs. 12 – 15). These sherds, which are regarded as the handiwork of young girls learning the ceramic art, reflect an expected evolution of competency.

CERAMIC WASTAGE

Thirty-three fragments of ceramic wastage were found; these are regarded as discarded fragments of the ceramic manufacturing process. Some of the fragments may also represent the products of children mimicking the process. Eighteen fragments possess tempering material, and in the remainder temper is absent. There are nine coil fragments, but the remaining fragments or specimens are irregular masses.

CHIPPED STONE

LITHIC ANALYSIS

Projectile Points (Plate IV, figs. 1 – 4)

The projectile points from the Heron Bay site are exceptionally uniform with reference to the attribute of form. They are all side-notched, although an occasional specimen presents the recurrent problem of when side-notching leaves off and corner-notching begins. The form and metrical attributes of the projectile points are given on the following table. Different frequencies of attributes reflect the variable observations possible on both complete and fragmented specimens.

Table 7—FORM AND METRICAL ATTRIBUTES OF THE PROJECTILE POINTS

Form attributes		f
Blade edge configuration	Convex	12
	Straight	2
Base edge configuration	Convex	25
	Straight	4
	Irregular	2
Direction of side-notching	Lateral	18
	Oblique/lateral	1
Striking platform at base	—	4
Original flaker scar on both faces	—	1

Metrical attributes

	Range	Mean	f
	mm	mm	
Length	21-40	32.2	14
Basal width	9-23	16.3	31
Shoulder width	11-22	17.7	14
Notch height	4-10	6.2	16
Notch depth	2-4	2.9	16
Thickness	3-7	5.9	14

The condition of the projectile points is as follows: twelve complete; seventeen bases; five with a portion of the base and blade; one with one corner of the base missing; one with an impact fracture at tip; and ten unanalysable fragments. The high frequency of base fragments would appear to represent discards from shattered points retained on the arrow shafts brought back from the hunt.

Lances or Knives (Plate IV, figs. 5, 6)

Two specimens were recovered which may have functioned as lances or knives. As with the projectile points, both are side-notched. The complete specimen possesses symmetrical convex blade edges, a convex basal edge, and lateral side-notching. Measurements are as follows: length—83 mm; basal width—23 mm; shoulder width—30 mm; maximum blade width—35 mm; notch height—6 mm; notch depth—5 mm; and thickness—8 mm. Only the base and a portion of the notched area are present on the remaining specimen. The base configuration is triangular, and the side-notching is from a lateral direction. Measurements are as follows: basal width—29 mm; and distance of apex of base below major width axis of base—10 mm.

Biface Blades (Plate IV, figs. 38 – 40)

Four biface blades are complete or nearly so (one lacks the corner of the base and the other the extreme tip). Two of the specimens are ovate acuminate, and the others are triangular with relatively parallel edges. Length measurements on three specimens range from 47 mm to 70 mm, with a mean of 56.3 mm. Basal width (3) and maximum thickness (4) of the blades range from 20 mm to 21 mm and 6 mm to 9 mm with means of 20.7 mm and 7.8 mm respectively.

There are nine blade points, five of which could have been broken off projectile points. Bases are represented by seven specimens: four with a straight base edge and expanding blade edges; two with pointed bases; and one straight base edge with straight, parallel blade edges. Four midsection fragments of blades are represented as well as fifteen blade edges.

Scrapers

Scrapers were by far the most common stone artifact found at the Heron Bay site. The various classes and subclasses of scrapers are presented on the following table:

Table 8—SCRAPER CLASSIFICATION

Class	Subclass	f	%
End scraper	Simple	181	30.3
	Oblique	14	2.3
	Side-notched	1	.2
	Fragments	21	3.5
Side scraper	Irregular retouch	93	15.6
	Continuous retouch	74	12.4
	Irregular and continuous retouch	16	2.7
	Triangular	15	2.5
	Concave	4	.7
	Side-notched concave	4	.7
	Crooked	2	.3
	Fragments	10	1.7
Random flake scraper		163	27.3
TOTALS		598	100.2

END SCRAPERS

There were three subclasses of end scrapers found at the site exclusive of fragments. The subclasses have been called simple, oblique, and side-notched.

Simple end scrapers (Plate IV, figs. 7 – 10)

Simple end scrapers are represented by 181 specimens. The distinguishing attributes of this variety are a fairly broad scraping face relative to the length of the artifact and a rounded or squared-off apex which usually represents the point of the percussion that removed the flake from the core. The outline is normally trianguloid minus a clearly defined apex, although rectanguloid and square forms occur. The ventral surface generally lacks retouch with only three incidences of ventral retouch in the sample. Maximum width is located at the end scraping face.

Oblique end scrapers (Plate IV, figs. 11, 12)

The oblique end scraper differs in only one respect from the simple end scraper; namely, that the major scraping face at the end of the flake is markedly oblique with reference to the central axis of the flake. In the simple end scraper the scraping edge forms a convex arc which is approximately bisected by the central axis of the flake.

Side-notched end scraper (Plate IV, fig. 13)

This single specimen may represent a reworked projectile point. The blade edges are straight and parallel, the base is convex, and the side-notching is of the lateral/oblique variety. Very fine bifacial retouch is present. The scraper measures 36 mm in length, 27 mm in shoulder width, 22 mm at the base, 5 mm in notch height, 4 mm in notch depth, and 7 mm in thickness.

The metrical and form attributes of the simple and oblique end scrapers are given in the following table:

Table 9—METRICAL AND FORM ATTRIBUTES OF THE SIMPLE AND OBLIQUE END SCRAPERS

	Length (mm)		Width (mm)		Thickness at scraping edge (mm)		Scraping faces		
	Range	Mean	Range	Mean	Range	Mean	End	End and a side	End and both sides
Simple f	11-39 (181)	20.0	11-32 (179)	20.5	1-8 (177)	5.9	53.9 (96)	23.0 (41)	23.0 (41)
Oblique f	14-38 (14)	23.2	15-28 (14)	21.1	2-7 (14)	4.4	21.4 (3)	50.0 (7)	28.6 (4)

SIDE SCRAPERS

There were seven subclasses of side scrapers recognized. All these subclasses are characterized by retouch along the edge or edges of a linear flake. These flakes may be rectangular, triangular, elliptical, and so on, but in every incidence the length exceeds the width of the flake by a good margin. Also, in every case where the direction from which the flake was removed is readily apparent, it was found that the point of percussion was at one of the two ends of the flake. As the side scraper class fades into the random flake scraper class, there does exist an element of error in an absolute separation of the two classes, particularly with reference to fragments. The identifying characteristics of the two classes, however, allow for the clear separation of most specimens.

Irregular retouch side scrapers (Plate IV, figs. 14 – 20)

The term ‘irregular retouch’ refers to the incomplete scraping edge or edges to be found on these specimens. In no case does the retouch extend along the entire edge or edges of a specimen. Not infrequently only a short portion of a flake edge is retouched.

Continuous retouch side scrapers (Plate IV, figs. 21 – 26)

Contrary to the preceding subclass, these scrapers have a scraping face along the entire edge or edges of the flake.

Irregular and continuous retouch side scrapers (Plate IV, figs. 27 – 30)

Specimens belonging to this subclass have one edge entirely retouched and the other edge or edges partially retouched.

Triangular side scrapers (Plate IV, figs. 31 – 34)

On the triangular side scraper, retouch occurs along two edges which converge to a point.

The metrical and form attributes of the irregular, continuous, irregular and continuous, and triangular side scrapers are given on Table 10.

Table 10—METRICAL AND FORM ATTRIBUTES OF THE IRREGULAR, CONTINUOUS, IRREGULAR AND CONTINUOUS, AND TRIANGULAR SIDE SCRAPERS

	Length (mm)		Width (mm)		Thickness at scraping face (mm)		Length of scraping edge (mm)		Number of scraping edges			Scraping edges on opposite faces
	Range	Mean	Range	Mean	Range	Mean	Range	Mean	1	2	3	
Irregular f	17-64 (93)	28.2	7-31 (93)	15.0	1-2 (93)	1.2	6-33 (117)	14.3	71	20	2	1
Continuous f	14-46 (74)	25.0	7-39 (74)	13.9	1-7 (74)	1.3	7-46 (93)	21.5	55	19	-	4
Irregular and Continuous f	20-53 (16)	31.5	11-27 (16)	16.0	1-3 (16)	1.3	7-45 (33)	19.9	-	15	1	2
Triangular f	11-38 (15)	24.5	9-26 (15)	15.6	1-2 (15)	1.5	9-23 (33)	17.2	-	12	3	2

Concave side scrapers (Plate IV, figs. 35, 36)

The concave side scrapers have retouch along two sides and at one end. One side is always concave, and the other is usually straight or very slightly convex. The retouched end is obliquely bevelled in relation to the length of the axis of the scraper and, as such, is similar to the oblique end scraper variety. Metrical attributes of the four specimens are as follows: length ranges from 23 mm to 31 mm with a mean of 25.8 mm; length of obliquely bevelled scraper edge ranges from 12 mm to 24 mm with a mean of 17.0 mm; length of concave scraping edge ranges from 17 mm to 27 mm with a mean of 21.3 mm; length of straight scraping edge ranges from 14 mm to 22 mm with a mean of 17.5 mm; and thickness at the scraping edge ranges from 1 mm to 2 mm with a mean of 1.5 mm.

Side-notched, concave side scrapers (Plate IV, figs. 41 - 44)

These four unifacially flaked scrapers are side-notched in a lateral direction and possess a definite concave scraping edge along the blade area of the tool. The presence of unifacial flaking negates the possibility of the specimens being reworked projectile points. Two specimens have a scraping face along the straight edge opposite the concave scraping face. Metrical attributes are as follows: length ranges from 24 mm to 39 mm with a mean of 33 mm; shoulder width ranges from 15 mm to 19 mm with a mean of 17.0 mm; basal width ranges from 12 mm to 20 mm with a mean of 15.3 mm; length of concave scraping edge ranges from 18 mm to 26 mm with a mean of 22.3 mm; and thickness of the scraping edge ranges from 4 mm to 6 mm with a mean of 5.0 mm.

Crooked side scrapers (Plate IV, fig. 37)

Retouch occurs along both edges and one end of these crooked linear flakes. As their unique shape appears to be intentional they have been segregated. Lengths are 34 mm and 44 mm, and the maximum widths are 14 mm and 15 mm. Thickness of scraping edges is 2 mm.

RANDOM FLAKE SCRAPERS

As the name implies, this class of scraper includes all the random flakes which possess one or more scraping faces.

Linear Flakes (Plate IV, figs. 45 – 52)

Fifty-eight linear flakes, lacking retouch of any sort, were found. They range in length from 12 mm to 41 mm with a mean of 22.9 mm and in width from 3 mm to 19 mm with a mean of 9.4 mm. Although the writer does not regard these flakes as direct evidence of a polyhedral core-microblade tradition at the site, they are being examined since such flakes in the Northeast sometimes are used as evidence of antiquity or associations with Arctic microlithic complexes. All the flakes have one or two medial ridges and sides that are approximately parallel. In comparison with the Arctic blades, however, they are quite irregular, and evidence of polyhedral cores is lacking. Since nearly all the flaked material at the Heron Bay site was derived from nodular cherts, it is conceivable that the linear flakes are the fortuitous product of working with small nodules and striking off the longest flakes possible to be worked into artifacts. If, on the other hand, these specimens represent the product of a waning core-blade tradition, the tradition is so degenerate that direct comparisons with the north would not appear to be profitable.¹

Cores

Little can be said about the forty cores and fragments of cores which were found at the site. All of them appear to represent worked-down flint nodules, and large portions of the cortex are still present on many. The manner of removing flakes from the core, however, appears to have been random.

Chipping Detritus

A small amount of chipping detritus, derived from silicious deposits other than the nodular flint so common on the site, was noted. Quartz flakes were most abundant and could have been obtained from local veins in the Precambrian rocks. A green to grey quartzite of unknown origin was also present. Many of the quartzite flakes may have been accidentally detached from hammerstones. A dense black flint, very reminiscent of silicious coal, was also present. This material comes from a deposit near Rosspoint, 60 miles to the

¹On the basis of research being carried out by my colleague, David Sanger, on attributes associated with a prepared core-microblade technology, it appears that a number of the linear flakes from the Heron Bay site were struck from prepared cores. Under a microscope (9x and 24x) the dorsal surface of the striking platform of the blade indicates that preparation of the core edge had taken place prior to detachment of the blade.

west of the Heron Bay site. Two flakes of taconite indicated contacts with the Lakehead area. Of particular interest were two pieces of obsidian: one a simple end scraper and the other a flake. Samples of obsidian in the Laurel Tradition have been reported by Wilford (1952) at the Pike Bay Mound in Minnesota. Mr. Kenyon, of the Royal Ontario Museum, has also informed the writer of the presence of obsidian in Laurel sites along the Ontario side of the Rainy River.

In order to give a quantitative impression of the varieties of chipping detritus relative to flaked artifacts, the following table was compiled. It may be seen that 20.9 per cent of the flaked stone actually shows evidence of purposeful shaping.

Table 11 — WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Flint flakes without cortex adhering	3,046.0
Flint flakes with cortex adhering	1,989.0
Quartz flakes	132.3
Quartzite flakes	53.7
Rosspoint flint flakes	24.5
Taconite flakes	3.8
Obsidian flake	.3
Nodular flint cores	309.5
Linear flakes	35.6
Scrapers and fragments	1,081.5
Projectile points and fragments	118.7
Biface blades and fragments	125.2
Blanks and rejectage	153.8
TOTAL	7,073.9

ROUGH STONE

Hammerstones, netsinkers, heavy scraper tools, and red ochre nodules are included under the category of rough stone.

Hammerstones

Eight complete hammerstones, in addition to thirteen fragmented hammerstones, were recovered from the site. The complete artifacts and most of the fragmented specimens can be recognized as falling into four form classes: linear, circular, rectangular, and irregular.

Linear hammerstones (Plate V, fig. 9)

There were five complete linear hammerstones and six fragments. All the specimens are hard igneous and metamorphic natural cobbles which are markedly linear in shape. No artificial modification, other than the hammering faces, is present. Of the five complete artifacts, two are roughly symmetrical in shape, and three are wider at one end giving them an elongated triangular appear-

ance. Four of the complete hammers and one of the fragments (split vertically) have hammering faces at both ends, and one complete specimen and a fragment have two hammering faces along the opposing edges of the cobble. The remaining four fragments have a hammering face at one end; the other end of the tool is missing. In addition, two complete specimens and one fragment have an extra hammering face along one edge. Maximum lengths of the five complete hammerstones and the vertically split fragment range from 77 mm to 170 mm with a mean of 121.2 mm. Maximum widths of the five complete specimens and five of the measurable fragments range from 49 mm to 75 mm with a mean of 60.6 mm.

Circular hammerstones

One complete circular hammerstone and a fragment of another were found. These hammerstones are roughly round, water-washed cobbles with a hammering face encircling the entire circumference of the stone and with two unmodified sides probably by which the tool was grasped. The complete specimen has a diameter of approximately 52 mm.

Irregular hammerstones

One complete and one fragmented irregular hammerstone were recovered. As the name implies they are irregular cobbles which are unmodified except for the hammered faces. The complete specimen has three such faces, and the fragmented specimen possesses two hammering faces.

Rectangular hammerstone

A single complete rectangular hammerstone was found. It represents a rough schistose block which gives the appearance of a blank. Hammering faces occur along all four edges. The specimen is 117 mm long, 87 mm wide, and 44 mm thick.

The remaining five fragments are too small to be classified, although in every case a hammering face is apparent.

Netsinkers (Plate V, fig. 7)

Seventeen complete netsinkers and three fragments were recovered from the site. All the specimens consist of natural, flat cobbles of igneous, metamorphic, or sedimentary rocks which tend to be ovate or rectangular in shape with the former predominating. Fourteen complete specimens and the three fragments are end notched, but the remaining three netsinkers are side-notched. With one exception, the notches were produced by rough primary flaking. In the one exception, the notches were ground into the soft schistose slab. One of the two sandstone netsinkers had functioned as an abrader with evidence of use on both faces. The remaining specimens bear no evidence of modification other than the notches. Length, maximum width, and thickness measurements of the seventeen complete netsinkers range from 59 mm to 106 mm, 50 mm to 79 mm, and 7 mm to 33 mm, with means of 83.8 mm, 67.6 mm, and 17.9 mm respectively.

Scraper Tools

Five large, worked igneous and metamorphic flakes are regarded as rough scrapers.

Specimen 1 is a large fire-fracture spawl from a firestone and is markedly concave-convex in cross-section. Retouch occurs along one entire edge and sporadically at both ends. The retouched edge is also noticeably dulled or worn; the bit edge of the tool is very smooth (Plate V, fig. 8). This specimen measures 150 mm in length, 72 mm in width, 19 mm in thickness, and the scraping face is 5 mm in height.

Specimen 2 is rectanguloid in shape with rough scraping faces along the two long sides. This particular item appears to have served a dual function since shallow, but distinct, notches occur at both ends indicating its possible use as a netsinker. Length, width, and thickness measurements are 103 mm, 76 mm, and 15 mm, and the height of the scraping edge is 4 mm.

Specimen 3 is a rectanguloid flake with the dorsal face representing the cortex of a cobble. Retouch occurs along one edge. This specimen measures 74 mm in length, 48 mm in width, 17 mm in thickness, and the scraping face is 5 mm in height.

Specimen 4 is squarish in shape, and the dorsal face represents the cortex of a cobble. The point of percussion which removed the flake is at the opposite edge from the single scraping face. One of the sides is extensively battered suggesting that this tool also functioned as a hammerstone (Plate V, fig. 5). The flake measures 67 mm by 69 mm in length and 18 mm in thickness, and it has a scraping edge 62 mm long and 3 mm high.

Specimen 5 represents a mid-section fragment of a tool possessing a scraping face along one edge only.

Paintstone Nodules (Plate V, fig. 4)

Red ochre nodules, 544 in number, and one graphite nodule were found at the site. In addition to the nodular ochre, two small deposits of powdered ochre were also noted. Only one of the ochre nodules was purposefully shaped, this being squarish with two flattened faces and four flattened edges. This specimen measures 19 mm by 19 mm, and is 9 mm thick. A small number of the larger nodules also possessed one flattened face. Nodules range from 2 mm to 48 mm in length with the majority being 7 mm long.

GROUND STONE

Tools shaped by grinding were very rare; there were three knives, one gouge-like implement, and one block of steatite. Much more common in the ground stone category were the tools polished by use, namely 21 abraders and one mano.

Abraders (Plate V, fig. 6)

All the abraders except one consist of slabs of silty to coarse sandstone. The one exception is a fine sandstone pebble of elongated shape. Nine fragments are angular, four are ovate to circular, four are irregular, and four

are too fragmentary to determine shape. Eleven abraders show evidence of grinding on one face, although, because of the fissile nature of the stone, a second ground face could be missing. Ten abraders are ground on both faces. In five instances grinding was apparent along the edges. Notches on two specimens possibly indicate their additional use as netsinkers. Thickness ranges from 2 mm to 23 mm with a mean of 10.3 mm, although a number of the thinner specimens may well represent sloughed-off faces.

Mano

The single mano is triangular in shape with a rectangular cross-section. Evidence of grinding is marked on both faces. In addition, the basal edges and the point of the implement have been used for hammering. The specimen is 168 mm long and 110 mm by 56 mm at the base.

Slate Knives

Of the three slate knives, two consist of flakes with the only grinding occurring along a single edge. The grinding is bilateral, and the lengths of the cutting edges are 21 mm and 29 mm (Plate V, fig. 3). The remaining specimen possesses overall grinding and appears to represent half of a semi-lunar blade. A single bevelled edge is ground into the straight base, and bilateral grinding is present along the convex cutting edge (Plate V, fig. 2). The incomplete length and the complete width of the artifact are 34 mm and 24 mm respectively, and the thickness measures 4 mm.

Gouge-like Implement (Plate V, fig. 1)

This slate tool has a narrow rectangular shape with both grinding and chipping apparent at the gouge bit edge. A small hammering facet occurs at a basal corner. The tool measures 91 mm long, 24 mm wide, and 9 mm thick. The bit edge is contracted and measures 15 mm. A clearly observable medial depression extends from the bit edge for 70 mm of the artifact's length.

Steatite Block

A steatite block, which probably represents some unfinished artifact, is ground along one face and three edges. It measures 67 mm in length, 37 mm in width, and 24 mm in thickness.

NATIVE COPPER

One hundred and nineteen copper artifacts and one hundred and eleven copper fragments and hammered nuggets comprised a total of 230 native copper items recovered from the site. The artifacts, in descending order of frequency, consisted of beads, bars, awls, barbs, bangles, chisels, scrapers, a pendant, a projectile point, and a problematical object. The nearest source of native copper presently known is 46 miles to the west on the outlying islands near the town of Schreiber. Deposits also occur at greater distances to the south and the east.

Beads

The thirty-four copper beads from the Heron Bay site fall into two classes, tubular and disc.

Tubular beads (Plate VI, figs. 22 – 24)

There were twenty-seven tubular beads in all. In three instances the beads taper towards the end so that the maximum diameter occurs in the centre, and in a single case the maximum diameters are at the ends of the bead. In all other cases, excluding crushed specimens, the maximum diameter is consistent throughout the entire length of the bead. Lengths range from 7 mm to 38 mm with a mean of 13.6 mm while maximum diameters range from 2 mm to 7 mm with a mean of 3.4 mm. In every instance a seam is visible along one side where the flat bar had been folded and pinched together to form the bead.

Disc beads (Plate VI, figs. 20, 21)

On the seven disc beads the maximum diameter exceeds or is equal to the maximum length of the bead. As with the tubular bead, a seam is visible along one side. Lengths range from 1 mm to 5 mm with a mean of 2.7 mm while diameters range from 3 mm to 6 mm with a mean of 4.7 mm.

Bars (Plate VI, figs. 17 – 19)

The twenty-eight copper bars from the site may represent decorative items to be attached to clothing, or, in some cases, straightened-out beads, or possibly a stage in the preparation of copper for artifact manufacture. In cross-section the bars are rectangular, although not infrequently they are irregular at the ends. Lengths range from 13 mm to 50 mm with a mean of 24.7 mm while width ranges from 2 mm to 9 mm with a mean of 5.4 mm. Thickness ranges from 1 mm to 5 mm with a mean of 2.3 mm.

Awls

The twenty-six copper awls have been segregated into double pointed and single pointed specimens. Both varieties exceed 30 mm in length and have a rectangular to square cross-section.

Single pointed awls (Plate VI, figs. 14 – 16)

Eighteen awls have a single point and a blunt base. Lengths range from 32 mm to 58 mm with a mean of 42.8 mm, and the mean maximum thickness ratio is 2.6 mm to 4.0 mm with ranges of 2 mm to 4 mm and 2 mm to 6 mm. The base of one of these awls is a flattened phlange.

Double pointed awls (Plate VI, figs. 12, 13)

Eight awls are pointed at both ends. It is quite possible that some of the shorter specimens may have functioned as gorges. Lengths range from 32 mm to 103 mm with a mean of 55.9 mm. The mean maximum thickness ratio is 2.0 mm to 2.8 mm with ranges of 1 mm to 3 mm and 2 mm to 3 mm.

Barbs (Plate VI, figs, 1 - 5)

These twelve single pointed copper items are all less than 30 mm in length and have a rectangular to square cross-section and a blunted or irregular base. They have been interpreted as barbs from composite hooks, although it is equally possible that they functioned as hafted awls. All are straight with the exception of a single curved specimen. Lengths range from 13 mm to 29 mm with a mean of 20.8 mm. The basal thickness ratio is 2.6 mm to 3.1 mm with ranges of 1 mm to 4 mm and 2 mm to 4 mm respectively.

Bangles (Plate VI, figs. 9, 10)

Eleven copper bangles or tinklers were found at the site. It is interesting to note that these conical decorative items, so commonly manufactured from trade copper, iron, and other metals on historic sites in the area, also have a prehistoric prototype in native copper. A vertical seam is present in every instance, and the base diameter always exceeds the proximal diameter. Lengths range from 11 mm to 26 mm with a mean of 16.3 mm. The basal diameters range from 3 mm to 10 mm with a mean of 7.1 mm, and the proximal diameters range from 2 mm to 6 mm with a mean of 4.1 mm.

Chisels (Plate VI, fig. 7)

All three copper chisels have a rectangular cross-section and a flaring bit. The two larger specimens are 50 mm and 57 mm long, 9 mm and 10 mm wide at the bit edge, and 4 mm by 6 mm and 4 mm by 5 mm in the centre. One has a pointed base and the other a squared-off base. The small specimen is 16 mm long, 4 mm wide at the bit edge, and 2 mm by 3 mm in the centre. Its base is squared-off.

Scrapers (Plate VI, fig. 8)

These two items consist of flat, rectanguloid sheets of copper with a bevelled edge or end and are thought to have functioned as scrapers. Lengths are 30 mm and 33 mm, thicknesses are 1 mm and 2 mm, and lengths of scraping faces are 10 mm and 15 mm.

Projectile Point (Plate VI, fig. 6)

The single projectile point is conical in shape with a socket for the shaft. Length is 53 mm, basal width is 11 mm, and socket depth is 16 mm.

Pendant (Plate VI, fig. 11)

This item is roughly triangular in outline with a triangular suspension hole. It was manufactured from a flat rectangular bar which was bent in two places. Length from apex to base is 14 mm, basal width is 13 mm, and thickness is 2 mm.

Problematical Object

It may be that this object represents a large barb from a composite hook. It is curved and comes to a wedge-shaped point. A notch is present approxi-

mately where the barb of a modern hook is located and may have functioned as such. The cross-section is rectangular except at both ends, which taper to a wedge. Length, central thickness, and distance of notch from tip are 35 mm, 3 mm by 5 mm, and 10 mm, respectively.

Flattened Fragments and Flakes (Plate VI, figs. 27 – 29)

Eighty thin flakes or fragments of hammered copper were recovered. Some of these may be fragments from artifacts such as beads, but the majority appear to be wastage from the manufacturing process.

Flattened Nuggets (Plate VI, figs. 25, 26)

The thirty-one flattened copper nuggets differ from the preceding flakes and fragments in being thicker and in retaining a portion of the original nugget surface.

BONE

Bone preservation at the Heron Bay site was variable. In some areas of the excavation bone was in an excellent state of preservation while in other areas it was non-existent or was reduced to punk. The variable distribution of ash concentrations on this site, which would reduce soil acidity, appears to be responsible for the differing degrees of preservation. Despite this situation, a large sample of bone refuse was recovered as well as a number of bone artifacts.

Beaver Incisor Tools

Fourteen beaver incisor tools plus seven fragments bearing evidence of modification were recovered from the site. While the fragments could not be classified as to variety of incisor tool, the fourteen relatively complete specimens could be separated into three varieties.

Oblique beaver incisor tools (Plate VI, figs. 38, 39)

There are nine beaver incisors with grinding along the right distal portion of the incisor which removed obliquely the right lingual and labial areas of the tooth and terminated at the unmodified left side to form a point or, in a single instance, a wedge. Modification of any kind is absent except for this oblique removal of the right lingual-labial area. Lengths range from 30 mm to 53 mm with a mean of 43.2 mm. Lengths of the obliquely ground right lingual-labial surface range from 14 mm to 32 mm with a mean of 21.1 mm. Since the ground area is flat, the length of the ground facet determines the angle of the bevel.

Step beaver incisor tools (Plate VI, fig. 40)

Four incisors possess, along the lingual face of the incisor, marked grinding that terminates at the proximal portion of the incisor's natural lingual bit juncture which is also partially modified. As a result of this treatment, the juncture

of the ground lingual face and the partially modified natural lingual bit face forms a projection or step. The lingual grinding appears to extend to the proximal extreme of the incisor. Lengths range from 27 mm to 39 mm with a mean of 32.8 mm. Distance of projection produced by ground labial surfaces from bit edge ranges from 12 mm to 14 mm with a mean of 12.8 mm.

Proximal and distal lingual ground incisor tool (Plate VI, fig. 41)

This single, vertically split incisor was ground on the proximal lingual face of the incisor and on the distal lingual surface, but the central lingual area is unmodified. Length is 59 mm while lengths of the proximal ground labial face and distal ground labial face are 16 mm and 21 mm respectively.

Awls (Plate VI, figs. 35 – 37)

Very few distinctive traits are present on the two complete awls or the five tips, three bases, and three midsections of awls recovered from the site. One base had been ground on both faces to produce a wedge, and another shows medially located longitudinal grooves on both faces. Also, eight specimens have markedly flattened rectanguloid cross-sections. These specimens range from 5 mm to 13 mm in width and 2 mm to 6 mm in thickness with means of 8.1 mm and 4.0 mm respectively. Of the two complete awls, one is a fish spine with wear at the tip, and the other is of bone. The lengths of these two specimens are 64 mm and 53 mm respectively, although two of the base fragments (lacking a substantial portion of the tip) are in excess of 130 mm in length.

Harpoon Heads

Two barbless antler harpoons, one complete and one with a small portion of the basal edge missing, and one large antler barb were recovered from the site. The barbless harpoons are very similar with the exception of the line hole. Both are conical in shape with a straight-based enclosed socket. The complete specimen has a rectanguloid cut line hole on one face, the distal half of which connects with the basal socket. In lateral view this specimen is plano-convex with the line hole occurring on the convex face (Plate VI, fig. 30). The remaining barbless harpoon has a line hole occurring well above the socket and perforating both sides of the implement. On one side the line hole is rectanguloid in shape, but it tapers to a circular perforation on the opposite face. This specimen is also plano-convex in lateral view with the line hole extending through the specimen laterally (Plate VI, fig. 31). The complete harpoon is 75 mm long, 20 mm by 16 mm in basal dimensions, 17 mm in socket length, and the single line hole perforation is 8 mm by 7 mm. All but the basal measurements are present on the remaining harpoon; it is 75 mm long and 16 mm in socket length, the line hole is 8 mm above the termination of the socket, and line hole dimensions are 8 mm by 5 mm on one face and 4 mm in diameter on the remaining face. Little can be said about the single barb fragment except that it is large with a height in excess of 9 mm and a length in excess of 12 mm. The edge of the barb is symmetrically bevelled.

Netting Needles (Plate VI, figs. 43, 44)

These two flat fragmentary bone specimens are inferred to have functioned as netting needles. Both specimens have a central bi-convexly drilled hole. One specimen is broken through the line hole, and the other lacks both ends. It is assumed that both implements were originally double-pointed. Lengths from the line hole to one estimated pointed end are 31 mm and 29 mm. Width and thickness measurements at the line hole are 9 mm by 4 mm and 7 mm by 2 mm. Line hole diameters are both 2 mm.

Pendants

The two pendants consist of a moose incisor (Plate VI, fig. 33) and a phalange with bi-convexly drilled suspension holes. No further modification is apparent on the phalange, although the lingual face of the moose incisor bears evidence of cutting and polishing. Suspension hole diameters are both 2 mm.

Tubular Beads (Plate VI, fig. 42)

Two long bones had been scored and broken off. It is inferred that they were used as beads. One specimen made from a bird bone is complete, having a length of 26 mm and a diameter of 6 mm. The remaining specimen, a very small carbonized fragment, appears to have been manufactured from a mammal bone.

Pottery Markers

Two pottery markers were found in the excavations. One flat rib fragment has shallow notches along both edges which produce either the pseudo scallop shell or the dragged stamp impressions depending on how it is used. It is broken at both ends with the result that a length measurement is not possible (Plate VI, fig. 34). Width is 16 mm, thickness is 2 mm, and distance between notches along the edges ranges from 2 mm to 3 mm. The area between the notches is convex through either intention or use. The other pottery marker is represented by a very small fragment, along the rounded edge of which occurs a series of shallow notches spaced one millimetre or less from one another. This implement does not produce the pseudo scallop shell impressions, but it is excellent for executing the dragged stamp technique.

Worked Incisor (Plate VI, fig. 32)

This large incisor has all the lingual dentine and most of the labial dentine broken away. Along the lingual face of the incisor a high polish is evident, and the root canal is completely exposed.

Problematical

The longitudinal grooves, 1 mm wide and .5 mm deep, parallel one another along one face of this small bone fragment, and a single similar groove and numerous small scratches are present on the opposite face. The one edge has been notched every 7 mm, and the area between the notches is convex. The wide spacing of the notches excludes this specimen from the pottery marker category. It may represent some decorative object.

Miscellaneous

Nine fragments of bone and antler possess evidence of either scoring or cutting or grinding. Most are regarded as unfinished fragments or wastage, although two of the specimens may represent fragments from finished artifacts.

Vertebrate Remains

Mammal remains were identified by Mr. P. M. Youngman, Zoology Section, National Museum of Canada. Beaver (*Castor canadensis*) and moose (*Alces alces*) dominated the sample with beaver being apparently represented by the largest number of individuals. Other species recognized include caribou (*Rangifer tarandus*), muskrat (*Ondatra zibethica*), varying hare (*Lepus americanus*), and bear (*Ursus americanus*).

The small sample of fish remains was examined by Dr. D. E. McAllister, Zoology Section, National Museum of Canada, who identified the following species: *Prosopium cylendraceum* (round whitefish); *Salvelinus* sp. (char); *Acipenser fulvescens* (lake sturgeon); *Esox lucius* (northern pike); *Catostomus catostomus* (longnose sucker); and *Stizostedion* sp. (walleye or sauger).

SHELL ARTIFACTS

Disc Beads (Plate VI, figs. 45, 46)

Only two shell artifacts were found, and both of these are bi-convexly drilled disc beads. Diameters are both 10 mm; thicknesses are 3 mm and 2 mm; and diameters of suspension holes are 4 mm and 3 mm.

Shellfish Remains

Of the six shell fragments recovered from the site, two were sufficiently intact to be identified by Dr. A. H. Clarke, Jr., Zoology Section of the National Museum of Canada. These were identified as *Lampsilis radiata siliquoidea* (Barnes) and *Crenodonta costata* (Rafinesque). "Both undoubtedly came from a limestone area, probably southern Manitoba or south of the Great Lakes."

THE PELICAN FALLS SITE (EaKa - 1)

The Pelican Falls site was located and excavated during the 1962 field season. In general terms, the site is located approximately five miles northwest of Sioux Lookout on the route to Lac Seul, and in specific terms it is situated on the east bank of the English River one hundred yards below Pelican Falls. While steep clay banks characterize this portion of the river, the area occupied by the site consists of a gradually sloping clay shore line which probably represents a relatively recent depositional feature. Along approximately 150 yards of this shore line Late Woodland (Blackduck and Selkirk foci), Laurel, and Archaic materials are to be found, although there is but slight evidence of an Archaic occupation. The concentrated cultural debris does not appear to extend inland farther than thirty feet, although an undetermined portion of the site is under water during the low water level and the remainder of the site is beneath the water surface during the high water level. It would appear that the Lac Seul reservoir is responsible for the flooding. The culture-bearing

zone is three to four inches in thickness including the thin duff line, thereby presenting a complex superpositional problem. A clear stratigraphic separation of the various assemblages present was impossible. In all probability, the Late Woodland Blackduck and Selkirk foci were directly associated during their deposition, and this association, common to these two complexes west of the Lakehead, was noted on a number of nearby sites located on the high banks above the highwater level. The abundant Laurel material was, for the most part, mixed with Late Woodland material.

Whenever any depth of deposit was encountered, however, the Laurel and apparent Archaic materials were at the lowest level. The situation was such that no effective separation of the site components was possible, and, as such, the analysis of the Laurel component is limited to artifacts regarded as characteristic of the complex. In this regard, the majority of the non-ceramic artifacts included in the analysis may possibly have been associated with an earlier or a later component.

In addition to the abundant surface materials collected, two 10-foot squares proved to be quite productive. Along a portion of the eastern side of these squares a tree-fall depression was encountered. In the upper two inches of this feature, which appeared at a depth of eight inches, the occasional Laurel sherd was encountered. In the last five inches, however, only flakes, a scraper, and charcoal were found. The sizes of the flakes and the material both corresponded quite closely to those recovered from a nearby Archaic site, but they differed quite markedly from the chipping detritus characteristic of Laurel in the area. The abundance of rootlets in the charcoal rendered it unsafe for radiocarbon dating. Three post moulds were uncovered in one of the squares, but it was not possible to determine to which occupation they belonged.

Since the excavated Laurel material occurred in the thin duff and in the grey to black clay underlying the duff and, for the most part, was mixed with later and earlier complexes, the excavated material and the surface material have been combined and analysed as a single sample.

CERAMIC ANALYSIS

RIM SHERDS

The rim sherd classification for the Pelican Falls site is given on Table 12.

Table 12—RIM SHERD CLASSIFICATION

Technique	f	%
Pseudo scallop shell	23	51.1
Dragged stamp	10	22.2
Plain	3	6.7
Pseudo scallop shell and linear punctate	3	6.7
Linear punctate	2	4.4
Linear stamp and linear punctate	2	4.4
Incised	1	2.2
Miscellaneous	1	2.2
TOTALS	45	99.9

Pseudo Scallop Shell (Plate VII, figs. 2, 5)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques or verticals above horizontals	20
Two rows of obliques	2
Criss-cross above horizontals	1
	—
	23

<i>Lip decoration</i>	<i>f</i>
Absent	21
Verticals	2
	—
	23

<i>Interior decoration</i>	<i>f</i>
Absent	17
Obliques	4
Verticals	2
	—
	23

<i>Punctates</i>	<i>f</i>
Exterior (no bosses)	9
Exterior (interior bosses)	6
Interior (exterior bosses)	3
Absent	3
Exterior, two spaced rows (no interior bosses)	1
Exterior and interior alternating to produce external and internal bosses	1
	—
	23

<i>Punctate form</i>	<i>f</i>
Circular	6
Semi-lunar	4
Ovate acuminate	3
Rectangular	2
Ovate	2
Triangular	1
V-shaped	1
Irregular	1
	—
	20

Rim profiles

Rim profiles were represented by the following frequencies: 2 form 1; 6 form 5; 14 form 6; and 1 form 7.

Red ochre wash on rim exterior and/or lip

Three specimens with this attribute were noted.

Metrical data

	f	Range (mm)	Mean (mm)
Lip thickness	23	2-7	3.7
Thickness one inch below lip	23	4-8	6.8
Distance of exterior punctates below lip	17	9-19	13.5
Distance between exterior punctates	17	3-12	5.5
Vertical length of exterior punctates	17	3-5	3.4

Dragged Stamp (Plate VII, fig. 1)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of vertical dragged stamp	6
Horizontal rows of oblique dragged stamp	3
One horizontal row of vertical dragged stamp above horizontal rows of oblique dragged stamp	1
	10

<i>Lip decoration</i>	<i>f</i>
Absent	9
Encircling punctates	1
	10

<i>Interior decoration</i>	<i>f</i>
Absent	10

<i>Punctates</i>	<i>f</i>
Exterior (interior bosses)	7
Absent	3
	10

<i>Punctate form</i>	<i>f</i>
Ovate	5
Ovate acuminate	1
Rectangular	1
	7

Rim profiles

Rim profile varieties were represented by the following frequencies: 5 form 5; 2 form 6; 1 form 9; 1 form 14; and 1 form 15.

Metrical data

	f	Range (mm)	Mean (mm)
Lip thickness	10	3-6	5.2
Thickness one inch below lip	10	5-7	6.0
Distance of exterior punctates below lip	7	13-16	14.9
Distance between exterior punctates	7	5-8	6.9
Vertical length of exterior punctates	7	5-8	6.0
Width of bands of dragged stamp	10	4-7	5.7

Plain

<i>Lip and interior decoration</i>	f
Absent	3

<i>Punctates</i>	f
Exterior (interior bosses)	2
Absent	1

<i>Punctate form</i>	f
Circular	2

Rim profiles

Rim profile varieties were represented by the following: 1 form 3; and 2 form 5.

Metrical data

	f	Range (mm)	Mean (mm)
Lip thickness	3	3-4	3.3
Thickness one inch below lip	3	6-7	6.3
Distance of exterior punctates below lip	2	9 and 11	10.0
Distance between exterior punctates	2	4 and 5	4.5
Vertical length of exterior punctates	2	2	-

Pseudo Scallop Shell and Linear Punctate

<i>Motif exclusive of punctates and bosses</i>	f
Oblique or vertical pseudo scallop shell above horizontal linear punctate	3

<i>Lip decoration</i>	f
Absent	3

<i>Interior decoration</i>	f
Oblique pseudo scallop shell	2
Absent	1

<i>Punctates</i>	<i>f</i>
Exterior (interior bosses)	2
Absent	1

<i>Punctate form</i>	<i>f</i>
Elliptical	2

Rim profiles
Rim profiles were all form 5.

Metrical Data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	3	4-5	4.7
Thickness one inch below lip	3	5-6	5.7
Distance of exterior punctates below lip	2	13 and 14	13.5
Distance between exterior punctates	2	6	-
Vertical length of exterior punctates	2	4	-

Linear Punctate (Plate VII, fig. 3)

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontals	2

<i>Lip and interior decoration</i>	<i>f</i>
Absent	2

<i>Punctates</i>	<i>f</i>
Absent	2

Rim profiles
Rim profiles were both form 3.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	4
Thickness one inch below lip	5 and 6

Linear Stamp and Linear Punctate

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Oblique linear stamp above horizontal linear punctate	2

<i>Lip and interior decoration</i>	<i>f</i>
Absent	2

<i>Punctates</i>	<i>f</i>
Absent	2

Rim profiles
Both rim profiles were form 6.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	3
Thickness one inch below lip	7

Incised (Plate VII, fig. 4)

Motif exclusive of punctates and bosses

Verticals.

Lip and interior decoration

Absent.

Punctates

Exterior (interior bosses).

Punctate form

Circular.

Rim profile

Rim profile was form 3.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	4
Thickness one inch below lip	7
Distance of exterior punctates below lip	8
Distance between exterior punctates	6
Vertical length of exterior punctates	2

Miscellaneous Rim (Plate VII, fig. 6)

Motif exclusive of punctates and bosses

Oblique pseudo scallop shell with smoothed-over areas containing short obliques of incising above zones of horizontal pseudo scallop shell or horizontal bands of dragged stamp.

Lip

Plain.

Interior

Oblique pseudo scallop shell.

Punctates

Exterior (interior bosses).

Punctate form

Circular.

Rim profile

Rim profile was form 5.

<i>Metrical data</i>	<i>mm</i>
Lip thickness	3
Thickness one inch below lip	5

Distance of exterior punctates below lip	19
Distance between exterior punctates	6
Vertical length of exterior punctates	4

DESTROYED RIM SHERDS

Tables 13 and 14 present additional information obtained from rim sherds too fragmentary to be included in the rim sherd classification.

Table 13—EXTERIOR MOTIF AND TECHNIQUE OF DESTROYED RIM SHERDS

Technique	Motif					Totals
	Obliques	Verticals	Criss-cross	Obliques or verticals above horizontals	Horizontals	
Pseudo scallop shell	6	2	2	3	—	13
Dragged stamp	—	—	—	—	6	6
Linear punctate	—	—	—	—	1	1
TOTALS	6	2	2	3	7	20

Table 14—LIP AND INTERIOR TREATMENT OF DESTROYED RIM SHERDS

Rim area	Treatment					Totals
	Plain	Oblique pseudo scallop shell	Vertical pseudo scallop shell	Dragged stamp	Destroyed	
Lip	17	3	—	—	—	20
Interior	11	6	1	1	1	20
TOTALS	28	9	1	1	1	40

ENCIRCLING PUNCTATE AND CONCAVE EXTERIOR SHERDS

Quite frequently the encircling line of punctates, which occurs a short distance below the lip, represented a point of weakness along which sherds would fracture. Fifteen fractured sherds which retain the line of punctates along the superior edge and two sherds with a concave exterior but lacking the punctates are regarded as coming from the upper portion of the vessel, a short distance below the lip, and are, therefore, examined as a separate category.

Table 15—PROFILES OF SHERDS FROM NEAR THE RIM AREA

Exterior to interior configuration	Punctated sherds	Non-punctated sherds	Totals
Straight – straight	8	–	8
Concave – convex	4	2	6
Convex – concave	1	–	1
Indeterminable	2	–	2
TOTALS	15	2	17

The profiles of these sherds suggest that, most frequently, the extreme upper rim of the vessel is everted at, or immediately above, the encircling line of punctates. Sherd thicknesses range from 5 mm to 8 mm with a mean of 6.4 mm.

Table 16—EXTERIOR MOTIF AND TECHNIQUE OF SHERDS FROM NEAR THE RIM AREA

Technique	Motif			Totals
	Horizontals	Obliques	Plain	
Pseudo scallop shell	5	1	–	6
Dragged stamp	3	–	–	3
Linear punctate	4	–	–	4
Punctate	2	–	–	2
Incised	–	1	–	1
Plain	–	–	1	1
TOTALS	14	2	1	17

BODY SHERDS

Plain

Both exterior and interior surfaces of these sherds are generally carefully smoothed. Four specimens from this category have notches along the superior coil break surface to form the mortice and tenon joint. The notches are spaced from 5 mm to 9 mm apart with a mean of 7.0 mm.

Pseudo Scallop Shell

The pseudo scallop shell body sherds were divided into two groups consisting of sherds with overall decoration and sherds partially decorated with the remaining area plain. This latter group is regarded as sherds from that portion of the vessel where the decoration terminates.

Motifs on the overall decorated sherds consist of the following:

Continuous lines	55
Bands of short obliques or verticals	7
Combinations of the preceding	3
	—
	65

The width of the bands of short obliques or verticals ranges from 5 mm to 11 mm with a mean of 7.1 mm.

Motifs on the partially decorated body sherds consist of the following:

Obliques or verticals	11
Obliques or verticals below horizontals	4
Horizontals	2
	17

The thickness of these latter sherds, from the lower portion of the vessel, ranges from 5 mm to 8 mm with a mean of 7.0 mm.

Dragged Stamp (Plate VII, fig. 7)

Four of the 37 sherds possess a large undecorated portion. Width of bands ranges from 3 mm to 9 mm with a mean of 6.0 mm. On the four specimens with terminal decoration the bands are oriented horizontally. Thickness of these four specimens ranges from 5 mm to 7 mm with a mean of 6.0 mm.

Linear Punctate (Plate VII, fig. 8)

Nine of the sherds have an undecorated portion and are regarded as fragments from the portion of the vessels where the decoration terminated. The motifs of the nine specimens which could be oriented correctly consist of the following:

Horizontals	4
Line of punctates below horizontals	4
Obliques	1
	9

Thickness of the sherds with terminal decoration ranges from 4 mm to 8 mm with a mean of 5.3 mm.

Dentate Stamped

Five sherds possess an overall dentate stamped decoration. The dentate impressions are only 2 mm square, and the individual impressions are separated from one another by less than 1 mm.

Combined Techniques (Plate VII, fig. 9)

Two sherds have two different techniques involved in the decorative motif. One has bands of dragged stamp separated by two parallel lines of pseudo scallop shell impressions. The remaining specimen has parallel lines of pseudo scallop shell impressions adjoining an area covered with channelling.

Punctated

This single sherd has parallel rows composed of rectanguloid punctates.

Incised

Parallel incised lines are present on this single specimen.

Rocker Stamped

The large undecorated area on this sherd suggests that the vertical rocker stamping represents a terminal motif.

BASAL SHERDS (Plate VII, fig. 10)

All the basal sherds came from conoidal-based vessels and are plain. In five instances the exterior wall of the base is concave between the tip of the base and the superior portion of the fragment. Only one sherd represents the entire pointed base of a vessel; the remainder are fragments from the tapered side.

Table 17—BODY SHERD CLASSIFICATION

Category	f	%	Red ochre wash on exterior	Thickness (mm)	
				Range	Mean
Plain	271	62.0	6	4-10	6.6
Pseudo scallop shell...	82	18.8	—	4-10	6.7
Dragged stamp	37	8.5	—	4-8	6.4
Linear punctate	30	6.9	—	4-9	6.4
Dentate stamped	5	1.1	—	4-6	4.8
Combined techniques	2	.5	—	5-8	6.5
Punctated	1	.2	—	—	8.0
Incised	1	.2	—	—	6.0
Rocker stamped	1	.2	—	—	7.0
Basal sherds	7	1.6	—	9-18	12.7
TOTALS	437	100.0	6		

JUVENILE CERAMICS

Seven rim sherds and one body sherd are regarded as the products of young girls learning the ceramic art.

LITHIC ANALYSIS

Projectile Points

Five projectile points, which are regarded as belonging to the Laurel component of the Pelican Falls site, were recovered. Three specimens were chipped from flint, and the remaining two points had been made by partially grinding slaty-shale fragments.

The three chipped points represent three varieties; namely side-notched, straight stemmed, and expanding stemmed.

Side-notched (Plate VII, fig. 12)

The tip is missing from this long and relatively narrow projectile point. Blade edge and base edge configurations are convex, and the side-notching is

of the oblique variety. Shoulder width, base width, notch depth, notch height, and thickness measure 18 mm, 17 mm, 4 mm, 5 mm, and 8 mm, respectively.

Straight stemmed (Plate VII, fig. 11)

Convex blade edges, a convex base edge, and straight, parallel stem edges represent the form characteristics of this specimen. Length and stem length are 33 mm and 13 mm, and shoulder width, stem width, and thickness measure 18 mm, 10 mm, and 7 mm, respectively.

Expanding stemmed

Since the blade of this point is asymmetrical it may have functioned as a knife rather than as a projectile point. Blade edges are convex, but the base edge is straight. Length and stem length measure 40 mm and 13 mm respectively. Shoulder width, stem width at the neck, base width, and thickness measure 17 mm, 11 mm, 13 mm, and 7 mm, respectively.

Ground slaty-shale points (Plate VII, figs. 16, 17)

Both these specimens are approximately ovate acuminate in outline with flat faces. On one point grinding occurs along all the edges except at the base and on one entire face and the tip end of the opposite face. The edge grinding is flat with no evidence of bevelling. On the remaining specimen, edge grinding occurs only on the upper half of the point, although one entire face is ground and the other face is ground at the tip. Lengths are both 50 mm, maximum widths are 16 mm and 17 mm, and thicknesses are 2 mm and 3 mm.

Biface Blade

The single flint biface blade is ovate in shape with length, width, and thickness measurements of 82 mm, 42 mm, and 10 mm, respectively.

Pottery Marker (Plate VII, fig. 14)

A pottery marker, made from the same slaty-shale as two of the projectile points, was found. One edge has a broad, natural bevel while the other edge has a vertical section which tapers naturally at one end to a steeper bevel than is found at the opposite edge of the tool. Along the broad, bevelled edge a series of notches are centrally located for a length of 18 mm. At the other edge the notches begin in the centre and extend through to one end for a distance of 34 mm. As the notches along both edges are V-shaped, the resulting pseudo scallop shell impressions have pointed peaks rather than the rounded peaks created by implements with U-shaped notches. The only apparent modification on this tool is the notches along both edges. Figure 13, in Plate VII, illustrates some of the plasticine impressions obtained from the adjacent edge of the tool (fig. 14). The first impression to the left was realized by impressing the edge of the tool vertically into the plasticine, resulting in a fairly typical example of the dentate stamping found on Laurel ceramics. The second impression was done with the same tool, but

impressed obliquely into the plasticine. This impression duplicates the pseudo scallop shell of the V-peaked or triangular variety. The final series of impressions were done with the corner edge of the tool, and these duplicate the dragged stamp technique. In this last incidence the tool was used in a push-and-pull fashion. Figure 15 illustrates a series of pseudo scallop shell impressions produced with the other edge of the tool. The total length of the implement is 71 mm, the two end widths are 25 mm and 13 mm, and the thickness is 6 mm. In cross-section the wider end is rectangular with one bevelled edge, and the narrower end is asymmetrically triangular.

Problematical Ground Stone

Two fragments of slaty-shale show evidence of flat grinding along two edges. Both specimens may represent fragmentary projectile points.

Paintstone Nodules

Four red ochre nodules, lacking evidence of marked grinding, were found.

Hammerstones

Three large linear hammerstones and a small linear hammerstone were recovered. Two of the larger hammerstones have hammering facets at both ends while the other large specimen has a single hammering facet at one end. The small specimen, which is broken, has a hammering face at the remaining end. Two of the larger hammers also possess evidence of hammering and some grinding on two opposing faces. Lengths of the complete specimens range from 128 mm to 160 mm with a mean of 142.3 mm. Maximum widths of the same specimens range from 81 mm to 83 mm with a mean of 82.3 mm. The small broken hammerstone is 26 mm wide.

A percentage of the other stone tools from the Pelican Falls site certainly pertains to the Laurel occupation, particularly the scrapers. They were not, however, sufficiently characteristic to be even tentatively separated from the earlier and later occupations of the site.

THE KILLALA LAKE SITE (DgIp - 1)

The Killala Lake site is located at the north end of Killala Lake, approximately twenty-six miles inland to the north of Port Coldwell on the Lake Superior shore. An excavation of seven days' duration was carried out on the site during the 1960 field season.

The site extends along approximately 150 feet of the shore line of a small sand bay and inland generally for less than twenty feet. A broad, gradually sloping beach separates the site from the water by roughly 40 feet. The surface of the site was found to be 4.5 feet above the lake level, although the significance of this reading is dubious because of the fluctuating water levels caused by a dam. Artifactual remains are sparse, but they all pertain to the Laurel Tradition although a few historic graves have been reported from the site.

Though artifacts were sparse, chipping detritus was abundant, and excavations revealed that flint nodules occur naturally in the deposit. In this light, the Killala Lake site may be regarded, at least in part, as a quarry site. It should also be mentioned that the nodular flints appear to be identical to those encountered on Laurel components along the eastern half of the north shore of Lake Superior.

Three 10-foot squares and two units each 10 feet by 5 feet were extended along 50 feet of the shore line. The first four inches of the cultural deposit were excavated as a single level, and the occasional item below this depth was plotted both horizontally and vertically. The stratigraphy consisted of two thin duff lines separated from each other by an equally thin lense of sterile sand. These three strata averaged two inches or less in thickness and capped the cultural deposit which was represented by four to six inches of golden to grey sand. The cultural stratum rested on sterile, water-deposited sands and gravels. Two loose concentrations of fire-fractured stones were interpreted as hearths. One measured 62 inches by 52 inches, while the remaining hearth was circular with a diameter of 20 inches. As no soil distinction or charcoal existed around these features their depth was determined by the largest fire-stone fragment. Flakes, sherds, bone fragments, and other artifacts, however, appeared to be more concentrated in the immediate vicinity of the hearths.

The Killala Lake site appears to represent a small camp-site which was occupied for purposes of working the nodular flint.

CERAMIC ANALYSIS

RIM SHERDS

Rim sherds belonging to three vessels were found on the site, and the majority of the body sherds recovered appear to belong to these vessels.

Vessel 1 (Plate VIII, fig. 3)

Six rim sherds of this plain vessel were recovered. Decoration is lacking except for a row of exterior bosses which is raised by interior circular punctates. The rim profile is form 16. Lip thickness is 4 mm while the thickness one inch below the lip is 7 mm. Interior punctates are 12 mm below the lip and are separated from one another by 9 mm.

Vessel 2 (Plate VIII, fig. 1)

Six rim sherds were recovered from this vessel also. Extending down from the lip are two horizontal rows composed of short, vertical pseudo scallop shell impressions which are separated from one another by a row of exterior bosses. Below the lower row of vertical impressions occurs a large area decorated with horizontal pseudo scallop shell impressions which encircle the vessel. Below the horizontals occur another two horizontal rows of short, vertical pseudo scallop shell impressions. The remainder of the lower portion of the vessel is plain. In one area, where the horizontal pseudo scallop shell impressions and the first lower row of vertical impressions adjoin, a series of oblique pseudo scallop shell impressions creates a triangular motif which inserts itself

through the horizontals but does not reach the bosses. Both the lip and the interior of the vessel are plain, and the interior punctates, which raise the exterior bosses, are circular. The rim profile is form 5. Lip thickness is 6 mm, and the thickness one inch below the lip is also 6 mm. The interior punctates are 9 mm below the lip and are spaced 6 mm apart. The exterior decoration extends down from the lip edge for a distance of 90 mm.

Vessel 3 (Plate VIII, fig. 2)

Four rim sherds of this vessel were recovered. Extending down from the lip are two horizontal rows of short, vertical linear stamp above four horizontal rows of oblique linear punctate. The remainder of the vessel is plain. Lip thickness and thickness one inch below the lip are 2 mm and 3 mm respectively. Rim profile is form 16.

BODY SHERDS

Plain

The fifty-one plain body sherds range from 3 mm to 9 mm in thickness with a mean of 6.2 mm.

Pseudo Scallop Shell

Five of the seven sherds with pseudo scallop shell impressions have continuous line motifs. Of the remaining two specimens one has a continuous line motif associated with two parallel rows of short, vertical pseudo scallop shell impressions while the other, which is largely plain, has short, vertical pseudo scallop shell impressions. Thickness ranges from 6 mm to 8 mm with a mean of 6.7 mm.

LITHIC ANALYSIS

CHIPPED STONE

Projectile Points (Plate VIII, fig. 4)

Three chipped projectile points, all fragmentary, were recovered from the Killala Lake site. Little can be said about the small base fragment other than that it appears to have come from a side-notched point. The most complete projectile point, lacking only the tip, is side-notched laterally and has a straight blade edge and a convex blade edge and a straight base. Shoulder width and base width are 20 mm and 17 mm, respectively. Notch height and notch depth are 6 mm and 3 mm, respectively. Thickness is 7 mm. The remaining specimen has been largely destroyed by fire-fractures. It is obliquely side-notched on one edge and has an expanding straight edge on the opposite side. Blade edges are straight, and the base edge is convex. Shoulder width and base width are 24 mm and 17 mm, respectively, and thickness is 6 mm.

Biface Blades (Plate VIII, fig. 5)

Two of the three complete biface blades are ovate acuminate in shape while the remaining specimen is trianguloid and possesses convex blade

edges and a convex base. Length measurements range from 45 mm to 60 mm with a mean of 50 mm. Maximum widths and thicknesses of the three blades range from 21 mm to 27 mm and from 6 mm to 10 mm with respective means of 23 mm and 7.3 mm. There were, in addition, three blade tips, one base fragment, and a blade edge fragment. The base fragment, although bifacially flaked, is markedly plano-convex in cross-section.

Scrapers

Scrapers were the most common stone artifact found at the Killala Lake site. The classes and subclasses are given on the following table.

Table 18—SCRAPER CLASSIFICATION

Class	Subclass	f	%
End scraper	Simple	14	45.2
	Oblique	3	9.7
	Fragments	1	3.2
Side scraper	Continuous retouch	2	6.5
	Irregular retouch	1	3.2
	Irregular and continuous retouch	1	3.2
	Triangular	1	3.2
Random flake scraper	—	8	25.8
TOTALS		31	100.0

END SCRAPERS

Both simple end scrapers (Plate VIII, figs. 7, 13) and oblique end scrapers were recovered from the site. The metrical and form attributes of these two subclasses of end scrapers are given on the following table.

Table 19—METRICAL AND FORM ATTRIBUTES OF THE SIMPLE AND OBLIQUE END SCRAPERS

	Length (mm)		Width (mm)		Thickness at scraping edge (mm)		Scraping faces		
	Range	Mean	Range	Mean	Range	Mean	End	End and a side	End and both sides
Simple	15-36	23.5	12-26	18.7	1-6	3.2	50.0	42.9	7.1
f	(14)		(14)		(14)		(7)	(6)	(1)
Oblique	23-24	23.7	18-25	21.7	4-6	5.0	100.0	—	—
f	(3)		(3)		(3)		(3)		

SIDE SCRAPERS

Continuous retouch side scrapers

The two specimens in this subclass have scraping faces running the entire length of both edges. Flake lengths are 28 mm and 36 mm and maximum

widths are 13 mm and 18 mm. The lengths of the scraping edges are 18 mm and 25 mm on one specimen, and 29 mm and 30 mm on the other. The scraping faces are all 1 mm in height.

Irregular retouch side scraper

This single specimen consists of a flake 42 mm long and 22 mm wide with a scraping edge 22 mm in length. The scraping face is 1 mm in height.

Irregular and continuous retouch side scraper (Plate VIII, fig. 6)

This flake has one entire edge retouched for 19 mm and a portion 10 mm long retouched along the other edge. Both scraping faces are 1 mm in height.

Triangular side scraper

The two scraping faces on this specimen converge to a point and are 15 mm and 18 mm in length. The scraping faces are both 2 mm in height.

RANDOM FLAKE SCRAPERS

A few of the eight specimens of this class possibly represent fragments from other scraper subclasses, but the majority appear to represent retouched random flakes.

Linear Flakes (Plate VIII, figs. 14, 15)

Seven linear flakes, lacking retouch, were found. They range in length from 16 mm to 34 mm with a mean of 22.3 mm and in width from 5 mm to 11 mm with a mean of 8.3 mm. Each of the flakes has a medial ridge and the edges are approximately parallel.

Cores (Plate VIII, figs. 8, 9)

There were three varieties of cores present on the site. By far the most prevalent were flint nodular cores with random flake removal, and most of them retain a large portion of the cortex (108 of the 128 specimens). Only six cores show evidence of a pattern in flake removal. Three specimens each of unipolar and bipolar cores were found. On the unipolar cores linear flakes were detached by blows from one end of the nodule whereas on the bipolar cores the flakes were detached from both ends of the nodule.

Chipping Detritus

In addition to the cores, numerous flakes struck from nodules were recovered. These flakes may be divided into two categories; those retaining a portion of the nodule cortex and those lacking a cortex surface. The only non-nodular flakes found consisted of three quartz flakes and a single taconite flake. The latter was probably obtained from the Lakehead area.

In order to give a quantitative impression of the varieties of chipping detritus relative to flaked artifacts, Table 20 was compiled. It is noted that only 2.9 per cent of the flaked stone from the site actually possesses evidence of purposeful shaping.

Table 20—WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Nodular flint cores	2,437.0
Flint flakes with cortex adhering	1,123.0
Flint flakes without cortex adhering	409.3
Unipolar cores	28.0
Bipolar cores	18.7
Quartz flakes	5.1
Taconite flake	.1
Linear flakes	3.6
Scrapers	69.3
Projectile points	10.5
Biface blades and fragments	40.0
TOTAL	4,144.6

ROUGH STONE

Hammerstones, heavy scraper tools, and red ochre nodules are included under the category of rough stone.

Hammerstones

All four hammerstones are complete and consist of natural cobbles or pebbles unmodified except for the hammering faces. Two specimens are quite small measuring 46 mm and 50 mm in length and 38 mm and 36 mm in width. Both have hammering faces at both ends, and one has a hammering face along one edge. The two larger specimens measure 93 mm and 103 mm in length and 84 mm and 86 mm in width. Both have hammering faces at both ends, and both have one flat face which appears to have been flattened by grinding. On one of the flat faces there is a pecked depression.

Scraper Tools

Two large fragments of sedimentary rock are regarded as rough scrapers. On both fragments one face consists of the natural surface of the cobbles from which the fragments were struck. One specimen has retouch along one edge for a distance of 88 mm, but the other specimen has retouch along two edges for distances of 73 mm and 58 mm. In all instances the retouched edges are plano-convex in cross-section. The edges are also markedly dulled or battered. The specimens are 115 mm and 94 mm in length and 65 mm and 93 mm in width.

Paintstone Nodule

A single red ochre nodule was recovered. No evidence of grinding is present.

NATIVE COPPER

Projectile Point (Plate VIII, fig. 10)

A single tanged projectile point with a hexagonal cross-section blade and a rectangular cross-section stem was exposed in situ. It occurred, angled in a nearly upright position, at a depth of seven inches below the surface. Although this specimen was found at the bottom of the cultural deposit, the presence of sherds and other items at the same or greater depth in other areas of the excavation suggests that it is associated with the Laurel component and does not represent an Archaic specimen. The absence of Archaic traits in the lower portion of the excavation also supports this interpretation. This, however, does not preclude the possibility that the point represents an Archaic specimen picked up by the later peoples, although the latter were skilled workers of native copper, and it is the writer's opinion that the specimen was manufactured by them.

The blade edges are straight to a short distance from the tip where they change direction in an angular fashion to converge at the tip. The stem is straight-sided but expanding towards the base, and the junction of the stem and blade edges is concave. While the base is slightly irregular, it does possess a V-shaped notch. Total length, blade length, and stem length are 88 mm, 56 mm, and 32 mm, respectively. Shoulder width, neck width of stem, and base width are 22 mm, 10 mm, and 11 mm, respectively. Thickness is 4 mm at the stem-blade juncture.

Awl-Barb (Plate VIII, fig. 11)

This single, pointed specimen is 30 mm long, thus falling between the arbitrary separation measurement established for the segregation of awls and barbs. It is square in cross-section with a midsection measurement of 3 mm by 3 mm.

Bead

A single tubular bead was recovered, but it is too fragmentary to allow measuring.

Bar (Plate VIII, fig. 12)

A bent rectangular bar 6 mm wide and 2 mm thick was found.

Flattened Fragments and Flakes

Two linear copper fragments are regarded as wastage.

BONE

The only bone artifact recovered consists of the midsection of an awl. Acid soil conditions, only sporadically alleviated by ashy concentrations, probably account for the paucity of raw bone and the more frequent presence of small carbonized bone fragments.

THE PAYS PLAT SITE (DfIv - 2)

The Pays Plat site is located three-quarters of a mile upriver from the mouth of the Pays Plat River where it empties into Lake Superior. Cultural debris is restricted to a low sand knoll measuring approximately three hundred feet by one hundred feet. This knoll occurs 150 feet east of the bank of the river, and its long axis is at right angles to the river. Unfortunately the elevation of the knoll above the surface of Lake Superior was not obtained. In the exposed area of the site an abundance of fire-fractured stone, sherds, and stone artifacts and flakes was found. Bone remains were restricted to a few small carbonized fragments. Test pits in the undisturbed portion of the knoll revealed that, in places, the cultural deposit attains a depth of eight inches. All the material recovered pertains to the Laurel Tradition, and the site is regarded as a single component. The materials to be analysed were all recovered from the surface of the site in the field seasons of 1960, 1961, and 1963.

CERAMIC ANALYSIS

RIM SHERDS

Only ten rim sherds were recovered from the site; three of these were broken off along the encircling line of punctates, and another sherd represented a fragment from a juvenile vessel. Of the six analysable rim sherds three were decorated with pseudo scallop shell impressions, two with dragged stamp, and one with linear punctate.

Pseudo Scallop Shell (Plate VIII, fig. 16)

The motif on the three rims consists of verticals above horizontals separated by an encircling row of exterior punctates. Lips and interiors are undecorated. Rim profiles consist of form 6 (2) and form 5 (1). The exterior punctates are triangular (2) and circular (1) in shape and do not raise interior bosses. Lip thicknesses range from 3 mm to 4 mm with a mean of 3.3 mm, while the thicknesses one inch below the lip range from 6 mm to 9 mm with a mean of 7.7 mm. Distance of exterior punctates below the lip range from 10 mm to 15 mm with a mean of 13.0 mm. Distance between exterior punctates ranges from 4 mm to 5 mm with a mean of 4.3 mm, while the vertical length of the exterior punctates ranges from 2 mm to 5 mm with a mean of 3.7 mm.

Dragged Stamp

The two rims are decorated with horizontal rows of oblique dragged stamp. Both sherds possess exterior punctates of irregular (1) and rectangular (1) form which do not raise interior bosses. The lip and interior of one specimen are plain, but the other sherd possesses vertical dragged stamp on both of these areas. On this last rim a thin red ochre wash is present on the exterior. Rim profiles are forms 6 and 12. Lip thicknesses are both 3 mm, and thicknesses one inch below the lip are 6 mm and 7 mm. Distances

of exterior punctates below the lip are 10 mm and 11 mm, and the distances between the exterior punctates are 2 mm and 6 mm. Vertical heights of these punctates are 5 mm and 6 mm, and the widths of the bands of dragged stamp are both 4 mm.

Linear Punctate (Plate VIII, fig. 17)

Horizontal lines of linear punctate and an encircling row of ovate exterior punctates which do not raise interior bosses are present on this single rim. A bi-convexly drilled mending hole is also present. Lip and interior are plain, and the rim profile is form 6. Lip thickness is 5 mm, and thickness one inch below the lip is 7 mm. The exterior punctates occur 17 mm below the lip and are separated from one another by 3 mm. The vertical height of the punctates is also 3 mm.

DESTROYED RIM SHERDS

The motifs of the three destroyed rims consist of single examples of vertical pseudo scallop shell, horizontal rows of vertical dragged stamp, and horizontal rows of linear punctate. These motifs occur below the lip and above the encircling row of exterior punctates where the sherds have broken off. The dragged stamp specimen appears to have had a double row of exterior punctates. In no instance are interior bosses present. Lips and interiors are all plain.

JUVENILE CERAMICS

The single juvenile rim sherd is plain except for an encircling row of exterior punctates below the lip which do not raise interior bosses.

BODY SHERDS

Pseudo Scallop Shell

Sixteen of the sherds possess a continuous line motif, and the remaining sherd is decorated with short (8 mm) vertical pseudo scallop shell impressions. One of the sherds with a continuous line motif also possesses a plain area which is regarded as part of the area of the vessel where the decoration terminated. Another sherd, with a straight profile, has exterior punctates along one fracture line. Two sherds have a red ochre wash on the exterior. Sherd thicknesses range from 5 mm to 10 mm with a mean of 7.5 mm.

Plain

The fifteen plain body sherds range from 6 mm to 11 mm in thickness with a mean of 7.7 mm.

Dragged Stamp

All four sherds have parallel bands of dragged stamp. These bands range in width from 3 mm to 5 mm with a mean of 4.0 mm. Thicknesses range from 6 mm to 7 mm with a mean of 6.3 mm.

Linear Punctate

This single sherd possesses parallel lines of linear punctate and is 9 mm thick.

LITHIC ANALYSIS

CHIPPED STONE

Projectile Point (Plate VIII, fig. 18)

A single base fragment of a projectile point was recovered from the Pays Plat site. The specimen has lateral side-notches and a convex base. Widths at the notches and the base are 10 mm and 17 mm.

Biface Blade

A single base fragment of a biface blade was found. It is convex in form.

Scrapers

As is normal on Laurel Tradition sites in Northern Ontario, the scrapers represent the most common stone artifact category.

Table 21—SCRAPER CLASSIFICATION

Class	Subclass	f	%
End scraper	Simple	11	28.2
Side scraper	Irregular retouch	10	25.6
	Continuous retouch	6	15.4
	Irregular and continuous retouch	2	5.1
	Triangular	1	2.6
	Crooked	1	2.6
	Fragment	1	2.6
Random flake scraper	—	7	17.9
TOTALS		39	100.0

END SCRAPERS

The metrical and form attributes of the simple end scrapers (Plate VIII, figs. 19, 20) are given on Table 22.

Table 22—METRICAL AND FORM ATTRIBUTES OF THE SIMPLE END SCRAPERS

Length (mm)		Width (mm)		Thickness at scraping edge (mm)		Scraping faces		
Range	Mean	Range	Mean	Range	Mean	End	End and a side	End and both sides
12-33 (11)	20.1	13-23 (11)	19.3	2-8 (11)	4.3	54.5 (6)	27.3 (3)	18.2 (2)

SIDE SCRAPERS

Irregular retouch side scrapers (Plate VIII, fig. 22)

Of the ten specimens in this subclass, seven have a single scraping face and three have two scraping faces. Of the latter specimens one has the scraping edges on opposing faces of the flake. Overall lengths and widths of these flakes range from 17 mm to 37 mm and from 9 mm to 21 mm with respective means of 27.2 mm and 15.2 mm. The lengths of the thirteen scraping faces range from 7 mm to 23 mm with a mean of 15.2 mm. Height or thickness of the scraping faces ranges from 1 mm to 2 mm with a mean of 1.2 mm.

Continuous retouch side scrapers (Plate VIII, fig. 23)

Of the six specimens in this subclass, one half possess a single scraping face and the other half possess two parallel scraping faces on the two long edges. Overall lengths and widths of the flakes range from 19 mm to 35 mm and from 11 mm to 25 mm with means of 25.2 mm and 17.3 mm respectively. Lengths of the nine scraping faces range from 15 mm to 31 mm with a mean of 21.0 mm. Height or thickness of the scraping faces ranges from 1 mm to 3 mm with a mean of 1.6 mm.

Irregular and continuous retouch side scrapers

The two specimens involved measure 21 mm and 31 mm in length and 13 mm and 23 mm in width. The continuous scraping edges on the scrapers are 18 mm and 28 mm in length while the irregular or discontinuous scraping edges are 12 mm and 13 mm. The four scraping faces range in height from 1 mm to 2 mm with a mean of 1.3 mm.

Triangular side scraper (Plate VIII, fig. 24)

The two scraping faces of this specimen converge to a point. The flake is 21 mm by 15 mm, and the scraping faces are 13 mm and 17 mm in length and 1 mm in height.

Crooked side scraper (Plate VIII, fig. 21)

Retouch occurs along both sides and one end of this crooked flake. Maximum lengths of both the flake and the two lateral scraping edges are 29 mm, and the maximum width is 10 mm. The scraping faces vary from 1 mm to 2 mm in height.

RANDOM FLAKE SCRAPERS

All seven of these irregular flakes possess a single scraping face.

Linear Flakes (Plate VIII, fig. 26)

Two linear flakes were found, both of which possess a medial ridge and approximately parallel sides. Lengths are 15 mm and 22 mm, and widths are 11 mm and 7 mm.

Cores (Plate VIII, fig. 25)

Cores were limited to two bipolar flint nodule cores and a large pebble core of Rossport flint.

Chipping Detritus

The flakes found on the site were segregated on the basis of the presence or absence of the natural cortex of the pebble from which they were struck. With the exception of the large pebble core of Rossport flint, all the flakes came from small flint nodules.

In order to give a quantitative impression of the varieties of chipping detritus relative to flaked artifacts, Table 23 was compiled. It is noted that 17.2 per cent of the flaked silicious stones actually bear evidence of purposeful shaping.

Table 23 — WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Nodular core of Rossport flint	184.0
Flint flakes without cortex adhering	70.5
Flint flakes with cortex adhering	52.6
Bipolar cores	5.9
Linear flakes	.8
Scrapers	61.9
Projectile point fragment	1.0
Biface blade fragment	2.2
TOTAL	378.9

ROUGH STONE

Netsinkers, abraders, hammerstones, and paintstone nodules are included under the category of rough stone.

Netsinkers (Plate VIII, fig. 27)

Nine complete netsinkers and five fragments of netsinkers were recovered from the site. All the specimens are natural, flat, water-washed cobbles of igneous, metamorphic, and sedimentary rocks which tend to be ovate or rectangular in shape, although irregular forms are also present. All the complete netsinkers are end-notched; the notches were produced by rough percussion flaking. The three complete sandstone netsinkers and one sandstone fragment of a netsinker had functioned as abraders on both faces. A schistose specimen also has grinding along one edge. Length, maximum width, and thickness measurements of the nine complete netsinkers range from 63 mm to 124 mm, 47 mm to 114 mm, and 6 mm to 28 mm, with respective means of 92.7 mm, 67.3 mm, and 14.0 mm.

Abraders (Plate VIII, fig. 28)

All eleven abraders, with one exception, are fissile shale fragments. The single exception is a small fragment of fine sandstone. One fragment has a

convex end whereas the remainder of the abraders are angular in form and give the appearance of fragmented tablets. Two fragments are linear in shape with nearly square cross-sections. Evidence of use is present on both faces except where one face has broken away. Four fragments have notches and may represent portions from shattered netsinkers which were used also as abraders. Thicknesses range from 4 mm to 10 mm with a mean of 6.3 mm.

Hammerstones

Two complete linear hammerstones were found. Both consist of natural cobbles; one is triangular in form and the other is almost cylindrical. The triangular specimen possesses hammering faces at both ends whereas the cylindrical specimen has a single hammering face at one end. Maximum length and width measurements of the triangular specimen are 116 mm and 74 mm and the same measurements for the cylindrical specimen are 146 mm and 64 mm.

Paintstone Nodule

A single unmodified red ochre nodule was recovered.

NATIVE COPPER

The only native copper from the site consists of a hammered-out nugget.

BONE

Bone from the site was limited to a few very small carbonized fragments, and it is assumed that acid soil conditions must have destroyed the osseous material.

THE LITTLE PIC SITE (DeIp - 2)

The site is located on the east bank of the Little Pic River where it empties into Lake Superior. Surface debris extends for two hundred yards along the lake front and for at least one hundred yards upriver on a broad sand plateau which stands approximately twelve feet above the surface of the lake. Sheer rock cliffs on the opposite side of the river present a contrast in topography. The cultural deposit, while extensive, is very thin and would probably result in small returns from any excavation. Sporadic areas of concentrated debris exist, however, and a 5-foot test square was excavated in one such location. The occupation zone was found to be approximately one inch thick and began in the root mass of the heavy turf. When one considers the small area excavated and the thinness of the deposit, the artifact production was quite high. With a few exceptions the materials to be described were recovered from the excavation.

CERAMIC ANALYSIS

Fragments of at least two vessels were recovered from the site and were represented by four small rim sherds and thirty body sherds. It is possible to

reconstruct the general appearance of the two vessels on the basis of the recovered sherds.

Vessel 1

This vessel is decorated on the exterior with horizontal bands of vertical dragged stamp. There is an encircling row of exterior punctates which do not raise interior bosses. The lip and the interior are both plain. Although incomplete, the rim profile appears to be form 6. Lip thickness and thickness at the encircling line of punctates are 3 mm and 6 mm. The punctates are ovate acuminate in shape and are spaced 8 mm apart. The bands of dragged stamp are 3 mm wide. An ochre wash occurs on the exterior rim. Thicknesses of the eighteen sherds of dragged stamp range from 5 mm to 7 mm with a mean of 6.4 mm.

Vessel 2

The decoration of this vessel is difficult to reconstruct in its entirety. Horizontal rows of dentate stamp occur above an encircling row of rectanguloid exterior punctates which do not raise interior bosses. Below the encircling punctates the dentate stamp appears to have been arranged in oblique rows with an occasional zone filled with elliptical punctates. The lip and the interior of the rim are both plain. All that can be said about the rim profile is that it appears to be slightly everted above the line of punctates. The lip is 4 mm thick, and the three body sherds are all 7 mm thick. Dentate impressions are 2 mm square and are separated from one another by 2 mm.

Nine plain body sherds were recovered; these range from 5 mm to 7 mm in thickness with a mean of 6.7 mm.

LITHIC ANALYSIS

Projectile Points (Plate IX, fig. 2)

One complete point and two base fragments were found. The complete specimen has lateral side-notches, a convex base edge, and convex blade edges. Both base fragments appear to have come from similar side-notched projectile points. The complete specimen is 23 mm long, 15 mm wide at the base and the shoulder, 5 mm in notch height, 2 mm in notch depth, and 5 mm thick. Of the two base fragments one has a straight base and the other has a convex base. The one measurable specimen has a base width of 11 mm.

Biface Blades (Plate IX, fig. 3)

One complete ovate acuminate blade and an edge fragment from a blade were found. The complete specimen is 45 mm long, 20 mm in maximum width, and 5 mm thick.

Scrapers

The six scrapers found all belong to different subclasses.

Simple end scraper

A scraping face occurs at the end and on one side of this specimen. Maximum length, width, and height of the scraping face measure 19 mm, 17 mm, and 4 mm.

Continuous retouch side scraper (Plate IX, fig. 4)

Continuous scraping faces occur along both parallel edges of this linear flake. Flake length and width are 32 mm and 14 mm; the scraping edges are 1 mm in height and measure 25 mm and 22 mm in length.

Irregular retouch side scraper

This large flake, measuring 58 mm by 34 mm, possesses a single scraping face 1 mm in height and 28 mm in length.

Irregular and continuous retouch side scraper

The flake measures 19 mm by 12 mm and has two scraping edges 1 mm in height and 17 mm and 9 mm, respectively, in length.

Concave side scraper (Plate IX, fig. 5)

A concave scraping edge, a straight scraping edge on the opposite side of the flake, and a bevelled or oblique scraping edge at one end place this specimen in the concave side scraper subclass. The lengths of the three scraping edges (concave, straight, and end) are 19 mm, 13 mm, and 9 mm, respectively. The concave and end scraping edges are 2 mm in height, and the straight scraping edge is 1 mm in height.

Spokeshave side scraper

A concave depression 15 mm in length and 5 mm in depth was chipped into one edge of this thick flake which may have functioned as a spokeshave.

Linear Flakes (Plate IX, fig. 6)

Two linear flakes with a medial ridge and approximately parallel sides were found. They measure 16 mm and 17 mm in length, and both are 9 mm wide.

Core

A single flint nodule core exhibiting random flake removal was found.

Chipping Detritus

In order to give a quantitative impression of the varieties of chipping detritus relative to flaked artifacts, the following table was compiled. Of the flaked stone 52.4 per cent actually bear evidence of purposeful shaping.

Table 24—WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Flint flakes without cortex adhering	15.6
Flint flakes with cortex adhering	1.6
Nodular flint core	12.3
Linear flakes	.7
Projectile points	2.7
Biface blades	6.5
Scrapers	23.8
TOTAL	63.2

Paintstone Nodules (Plate IX, fig. 8)

Five red ochre nodules were found. None of these exhibit evidence of purposeful shaping.

NATIVE COPPER

Awl (Plate IX, fig. 7)

A single pointed copper awl with a rectangular cross-section (6 mm by 3 mm) and a length of 52 mm was found.

Bead

A tubular bead was recovered, but the specimen is too crushed to take measurements.

Fragments

Three flattened copper fragments were found.

BONE

Bone preservation in the excavated square was good, but bone artifacts were not found.

THE SAND RIVER SITE (Cile - 1)

The site is located along an elevated sand ridge on the north bank of the Sand River at the river's embouchure into Lake Superior. It was difficult to determine the surface area of the site because of heavy bush, but it would appear to extend along the lake shore for at least a hundred yards. The upriver extent of the site has been largely obliterated by highway construction. Surface indications suggest that the site contains only a veneer of cultural debris and could not be excavated effectively. The elevation of the site above the lake level is five feet. Evidence of a Laurel occupation on the lower beach,

however, is absent. With the exception of a small amount of material recovered from a hearth, all the artifacts to be described were picked up from the surface. The upper portion of the hearth had been disturbed by bulldozer activity, and accurate surface dimensions of the feature were not obtainable. The undisturbed lower portion of the hearth, however, was five feet five inches by three feet and extended for a depth of six inches into the sterile sand. In the centre of the hearth a loose cluster of fire-fractured stones rested on a deposit of black sand rich in charcoal and containing the odd sherd, flake, and carbonized bone. A radiocarbon sample taken from this deposit gave a reading of 1630 ± 100 or A.D. 320 (M-1507). The black sand deposit was surrounded by mottled sand, which produced the occasional flake and firestone fragment, except at one edge where a small fire-reddened patch half an inch thick was encountered. From the amount of scattered firestones and flakes in the immediate area of the hearth it appears to have been a quite sizeable feature.

CERAMIC ANALYSIS

Although only one rim sherd was recovered from the site, the ceramic sample indicates the presence of at least five vessels.

Vessel 1 (Plate IX, fig. 9)

The decoration of this single rim consists of oblique pseudo scallop shell impressions above an encircling row of circular exterior punctates which raise interior bosses. Below the punctates is a series of horizontal pseudo scallop shell impressions. The lip is decorated although the impressions are too indistinct to allow identification. On the interior rim a line of vertical pseudo scallop shell impressions is present. The rim profile is form 6. Lip thickness and thickness one inch below the lip are 4 mm and 8 mm. The encircling punctates occur 16 mm below the lip, are 8 mm apart, and have a diameter of 4 mm. Two of the three body sherds which appear to pertain to this vessel possess an undecorated portion; these sherds are regarded as belonging to the area of the vessel where the decoration terminated. On these sherds the decoration consists of horizontal pseudo scallop shell impressions above short, oblique impressions done with the same tool. The third sherd possesses continuous pseudo scallop shell impressions. In thickness the three body sherds are 8 mm, 8 mm, and 9 mm. This vessel also has more tempering material and in larger particles than is normal for Laurel ceramics. There is a marked tendency towards fissility, and a number of unanalysed sherds with sloughed-off exteriors may pertain to this vessel.

Vessel 2

Two plain sherds with an encircling row of rectanguloid exterior punctates which raise interior bosses represent this vessel. Decoration other than the punctates is lacking. The concave exterior configuration of the sherds and the presence of the punctates indicate that they come from just below the lip. The punctates are 10 mm apart and have a vertical height of 7 mm. Sherd thicknesses are both 7 mm.

Vessel 3

Only one small sherd of this vessel was found. The sherd comes from just below the lip and can be oriented by the line of exterior bosses. Decoration consists of oblique pseudo scallop shell impressions. The exterior punctates are spaced every 11 mm, and the thickness of the sherd is 7 mm.

Vessel 4 (Plate IX, fig. 10)

This large sherd is straight in profile except at one end where the exterior profile becomes concave. It is, therefore, inferred that the concave portion represents the upper area of the vessel where the rim begins to flare out. Decoration consists of horizontal pseudo scallop shell impressions which are overlaid by an encircling row of short, vertical pseudo scallop shell impressions at the area on the sherd where it begins to flare outward. As such, these short verticals appear to duplicate the position of the usual encircling row of punctates. Sherd thickness is 6 mm.

Vessel 5 (Plate IX, fig. 11)

As with the preceding specimen, this sherd appears to come from the upper portion of the vessel. This is suggested by an encircling row of exterior punctates which occurs along one of the coil breaks. There is also evidence of a slight outward flaring starting just below the punctates. These punctates do not appear to have raised interior bosses. Decoration consists of horizontal rows of oblique dragged stamp below the punctates. The width of these bands is 5 mm, and the thickness of the sherd is 7 mm.

In addition to the preceding sherds, two plain body sherds measuring 7 mm and 10 mm in thickness were recovered.

LITHIC ANALYSIS

Only two scrapers and four flakes, all of nodular flint, were recovered from the site. The simple end scraper is 20 mm long, 23 mm wide, and has a single scraping face 5 mm high. The remaining scraper is rather unique in that it possesses four scraping edges. Two of these edges converge to a point, thereby resembling the triangular side scraper subclass. The two converging edges are 40 mm and 35 mm in length with respective heights of 3 mm and 1 mm. At the base of these scraping edges (if one takes the convergence point as the apex) there are short, slightly concave scraping edges. These edges are 18 mm and 20 mm in length with scraping face heights of 2 mm and 3 mm.

THE MICHIPICOTEN HARBOUR SITE (CIII - 2)

The site is located on Michipicoten Harbour, but it is separated from Lake Superior by a ridge of very high sand dunes. Cultural debris appears to be most concentrated on a series of sand ridges approximately one hundred yards

back from the large forward dunes. Even an estimate of the area covered by the site was not possible because of the forest cover. The elevation of the site above the lake level was not obtained.

CERAMIC ANALYSIS

A single vessel could be reconstructed from the sherds recovered from the site.

Vessel 1 (Plate IX, fig. 12)

The vessel is decorated with short, oblique pseudo scallop shell impressions placed in horizontal rows above a plain surface. Although the actual rim is missing, the available sherds indicate that the vessel had a slightly everted rim profile. There is a marked tendency for the interior and/or exterior of the sherds to fissility. Larger than usual tempering particles are present. The length of the pseudo scallop shell impressions is 13 mm, and all three decorated sherds are 6 mm thick.

Of the eight plain sherds from the site, five lack their interiors. The complete sherds are 5 mm, 6 mm, and 7 mm in thickness.

LITHIC ANALYSIS

Biface Blade (Plate IX, fig. 13)

A single point fragment of a biface blade was found.

Scrapers

Four scrapers consisting of a simple end scraper (Plate IX, fig. 14), an oblique end scraper, an irregular retouch side scraper, and a fragment were recovered.

The simple end scraper is 16 mm long and 20 mm wide and has a scraping face height of 2 mm. It possesses a scraping edge at the end only.

The oblique end scraper is 24 mm long and 19 mm wide and has a scraping face height of 8 mm. It also has the single scraping face at the end.

The irregular retouch side scraper is a flake 42 mm long and 26 mm wide with a 24 mm long scraping edge along one side. The height of the scraping face is 1 mm.

Chipping Detritus

Chipping detritus consisted, in grams, of 30.9 flint flakes with adhering cortex, 20.5 flint flakes without adhering cortex, and 6.2 quartzite flakes.

Abraders (Plate IX, fig. 15)

Three tabular fragments of sandstone abraders were recovered. Evidence of use is restricted to one face, and all three fragments may belong to a single specimen.

Hammerstone

A complete hammerstone, consisting of a linear cobble used at both ends, was found. There are two flat faces on either side of the cobble which may have functioned as grinding faces. Length is 177 mm, and midsection dimensions are 66 mm by 54 mm.

THE McLAREN SITE (DcJi - 2)

The McLaren site is located on the north side of the Kaministiquia River opposite its confluence with the Slate River and occupies approximately one hundred yards of the top of a steep embankment overlooking the Kaministiquia Valley. An examination of the site in 1963 revealed little as the area was covered by lawns. Firestone fragments were noted, and a simple end scraper and a few flakes were recovered from the roadway. The specimens to be described represent a ceramic sample obtained by Mr. T. E. Lee, formerly of the National Museum of Canada, from the collection in the possession of the McLaren family.

CERAMIC ANALYSIS

At least five vessels are represented in the sherd collection from the McLaren site.

Vessel 1 (Plate IX, fig. 16)

The vessel is decorated with oblique pseudo scallop shell impressions above horizontal lines executed with the same technique. Punctates or bosses are absent, and the lip and the interior are both plain. The rim profile is form 5. Lip thickness and thickness one inch below the lip are 4 mm and 6 mm, respectively.

Vessel 2

As with the preceding vessel, oblique pseudo scallop shell is located above horizontal lines of the same technique. The oblique lines, however, are longer, and they are separated from the horizontal design by a row of exterior bosses pushed out by interior circular punctates. The lip is decorated with vertical pseudo scallop shell impressions, although the interior rim is plain. Rim profile is form 5. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm, respectively. Bosses occur 17 mm below the lip and are separated by 8 mm. The diameters of the interior punctates are 4 mm.

Vessel 3 (Plate IX, fig. 17)

This vessel has a row of vertical pseudo scallop shell impressions above horizontal lines of pseudo scallop shell, and the two designs are separated by a

row of exterior bosses. The interior punctates, which pushed out the exterior bosses, have been completely obliterated by the smoothing of the interior. The lip is decorated with vertical pseudo scallop shell impressions, and the interior is plain. Rim profile is form 5. Lip thickness and thickness one inch below the lip are 7 mm and 8 mm. The exterior bosses occur 13 mm below the lip and are spaced 8 mm apart.

Vessel 4 (Plate IX, fig. 19)

The exterior lip edge of this vessel has been notched with a toothed implement. Below these notches a series of horizontal rows of oblique dragged stamp is present with an encircling row of exterior bosses occurring between the second and third rows of dragged stamp. The lip and the interior are plain, and the rim profile is form 3. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm respectively. The exterior bosses, which are pushed out by circular interior punctates, occur 19 mm below the lip and are 6 mm apart. Diameters of the interior punctates are 3 mm. There are traces of a red ochre wash on the exterior of the rim.

Vessel 5 (Plate IX, fig. 18)

Two horizontal rows of vertical linear stamp represent the decoration on the exterior rim of the vessel. Both the lip and the interior are plain, and punctates or bosses are absent. The design extends for 15 mm below the lip, and the rest of the vessel is plain. Rim profile is form 2. Lip thickness and thickness one inch below the lip are 4 mm and 6 mm.

The nine body sherds are all decorated with pseudo scallop shell impressions. Two sherds, coming from the area of the vessel where the decoration terminated, have horizontal rows of pseudo scallop shell with short, vertical pseudo scallop shell impressions below. Two specimens are inferred to be near the lip of the rim since one has a concave exterior and the other possesses a row of exterior bosses created by circular interior punctates. The sherds range from 5 mm to 9 mm in thickness with a mean of 6.8 mm.

THE MacKENZIE SITE (DdJf - 1)

The site is located on the east bank of the MacKenzie River at its mouth on Lake Superior and occupies approximately one hundred feet of lake frontage on a sand and gravel bank six feet above the lake level. Railroad construction has destroyed the upriver dimension of the site. The artifacts to be described were all collected from the surface of the site in the field season of 1960.

CERAMIC ANALYSIS

Three vessels are represented by the sherds found at the site. For one

vessel there is a single sherd, but for the remaining vessels there are both rim and body sherds.

Vessel 1 (Plate IX, fig. 20)

Approximately half of the vessel orifice was recovered, and it is possible to estimate its original diameter at 177 mm. Decoration consists of one horizontal line of linear punctate above a horizontal row of circular exterior punctates which do not raise interior bosses. Below the punctates a series of eight horizontal rows of linear punctate occurs above a blank area 21 mm wide, under which the horizontal rows of linear punctate appear again. The second to fourth rows of linear punctate under the encircling punctates angle up to the first row under the encircling punctates every 132 mm around the vessel. Also, in two instances, the blank area delineated by the horizontal linear punctate possesses two oblique lines of linear punctate. The lip and the interior of the vessel are plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are 6 mm and 7 mm. The exterior punctates occur 10 mm below the lip and are 5 mm apart. Their diameters are 2 mm. Four body sherds with the same variety of linear punctate and motif range from 7 mm to 8 mm in thickness with a mean of 7.5 mm.

Vessel 2 (Plate IX, fig. 21)

The vessel is decorated with both pseudo scallop shell and dragged stamp. At times, however, this dragged stamp, probably made with the same implement used to make the pseudo scallop shell impressions, is applied at such an oblique angle (almost horizontally) that the resulting impressions resemble linear punctate. Short, vertical pseudo scallop shell impressions extend down from the lip above horizontal rows of very oblique dragged stamp. Ovate acuminate punctates, which do not raise interior bosses, occur between the third and fourth rows of dragged stamp. The motif at the fracture edge of one of the larger rims and on the body sherds suggests that another row of exterior punctates is present, below which is a series of opposed oblique in linear punctate. The lip and interior are both plain, and the rim profile is form 6. Lip thickness and thickness one inch below the lip are 3 mm and 6 mm. Punctates occur 16 mm below the lip, are 3 mm apart, and have a vertical height of 4 mm. The lower row of punctates is 36 mm below the lip. The six body sherds attributed to this vessel range in thickness from 6 mm to 8 mm with a mean of 6.7 mm.

Vessel 3

Only a single sherd of this vessel was found. The vestige of an exterior boss is present thereby allowing the sherd to be oriented correctly. The straight profile of the sherd has a slight outward flare below the boss. Horizontal pseudo scallop shell impressions decorate the exterior. Sherd thickness is 6 mm.

Eleven plain body sherds were recovered. One sherd has a single incised line across it, but since the sherd is large the incision may be accidental. Sherd thicknesses range from 5 mm to 10 mm with a mean of 8.2 mm.

LITHIC ANALYSIS

Scrapers (Plate IX, figs. 22, 23)

Two scrapers, one made of taconite and the other of a grey translucent silicious material found in banded association with taconite, were found. Both specimens are continuous retouch side scrapers with flake lengths of 28 mm and 20 mm, widths of 13 mm and 10 mm, and scraping edge lengths of 25 mm and 19 mm. Scraping edge heights are both 1 mm.

Linear Flake

A single linear flake with a medial ridge and approximately parallel sides was found. It measures 14 mm in length and 11 mm in width.

Blank

A large blank of the grey translucent material was found. This specimen is 80 mm long, 61 mm wide, and 27 mm thick.

Cores

Three cores of the grey translucent material exhibit only random flake removal as does a single taconite core.

Chipping Detritus

The predominance on the site of taconite and the related grey translucent material reflects the proximity of outcropping as well as redeposited sources of the silicious rock in the area. Indeed, evidence of aboriginal quarrying operations in a bedrock deposit was found approximately 13 miles to the west in Port Arthur.

In order to give a quantitative impression of the varieties of chipping detritus relative to flaked artifacts, Table 25 was compiled.

Table 25—WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Taconite flakes	88.1
Taconite core	68.1
Grey translucent flakes	8.8
Grey translucent cores	108.4
Unfamiliar flint varieties	23.5
Nodular flint flake	0.6
Linear flake	0.7
Scrapers	3.2
Blank	160.0
TOTAL	461.4

THE ROSSPORT SITES (DeIv - 1 and DeIu - 1)

The two components under consideration are but two in a series of components extending eastward for over two miles from the town of Rosspport on Lake Superior. The area is characterized by a number of sand strandlines located at different elevations and intersected by periodic bedrock headlands. On the most recent beach, Late Woodland components, which contain the odd white trade item, are to be found. The Laurel components are situated on an elevated strandline approximately twelve feet above lake level (DeIu - 1). On a strandline at sixty feet above lake level Archaic materials are to be found. All the materials to be described were recovered from the surface of each site in the 1960 and 1961 field seasons. When one considers the extent of the components and their highly exposed condition, the amount of material recovered is small.

CERAMIC ANALYSIS

Two rim sherds were found. One specimen possesses horizontal rows of oblique dragged stamp (Plate X, fig. 1). The first row of dragged stamp below the lip has been dragged for a shorter distance than the lower rows have been, thus presenting a slightly different appearance. The rim profile is form 3. Lip thickness and thickness one inch below the lip are 4 mm and 6 mm, respectively, and the width of the dragged stamp bands is 3 mm. Both the lip and the interior of the rim are plain.

Since the exterior of the other rim sherd is very worn, the impressions are difficult to recognize. The oblique lines across the exterior, however, appear to have been executed by the linear punctate technique rather than by broad incising. An encircling row of exterior punctates, which do not raise interior bosses, is present. Interior and lip decoration are absent. The punctates are ovate in shape, occur 12 mm below the lip, have a vertical height of 4 mm, and are 5 mm apart. The rim profile is form 6. Lip thickness and thickness one inch below the lip are 4 mm and 7 mm, respectively.

Eleven body sherds were recovered. The five plain sherds range from 6 mm to 7 mm in thickness with a mean of 6.6 mm; the three pseudo scallop shell impressed sherds have the same thickness range but with a mean of 6.3 mm. Two linear punctate sherds are both 6 mm thick, and a single plain basal sherd is 9 mm thick. One of the pseudo scallop shell impressed sherds has a convex interior and was probably located a short distance below the lip of the vessel.

LITHIC ANALYSIS

CHIPPED STONE

Projectile Point

A single base fragment of a side-notched projectile point with a straight

base was recovered. This fragment is very similar to base fragments from the Heron Bay site, and it measures 16 mm in width.

Biface Blades (Plate X, fig. 5)

There were nine fragments of biface blades recovered from the DeIv – 1 and DeIu – 1 components. With one exception, all fragments were manufactured from the black silicious material obtained from the nearby Rossport deposit and even the exception may represent a colour variation from the same deposit. Seven fragments came from the base of the blade, one from the mid-section, and one from the edge. Bases are convex with occasional straight fracture lines. Maximum base widths range from 32 mm to 56 mm with a mean of 40.1 mm. Maximum thicknesses range from 7 mm to 19 mm with a mean of 12.2 mm. The far greater size and thickness of these bifaces, when compared to others from the Laurel Tradition, suggests that they may be unfinished artifacts, or it may simply reflect the proximity of an abundant supply of raw material.

Scrapers (Plate X, figs. 3, 4)

Table 26—SCRAPER CLASSIFICATION

Class	Subclass	f	%
End scraper	Simple	7	46.7
	Oblique	1	6.7
Side scraper	Continuous retouch	2	13.3
	Irregular and continuous retouch	1	6.7
Random flake scraper	—	4	26.7
TOTALS		15	100.1

END SCRAPERS

The metrical and form attributes of the simple and oblique end scrapers are given on Table 27.

Table 27—METRICAL AND FORM ATTRIBUTES OF THE SIMPLE AND OBLIQUE END SCRAPERS

	Length (mm)		Width (mm)		Thickness at scraping edge (mm)		Scraping face		
	Range	Mean	Range	Mean	Range	Mean	End	End and a side	End and both sides
Simple	12-38	24.4	17-24	20.3	2-7	3.6	57.1	28.6	14.3
f	(7)		(7)		(7)		(4)	(2)	(1)
Oblique	16.0	—	20.0	—	4.0	—	—	100.0	—
f	(1)		(1)		(1)			(1)	

SIDE SCRAPERS

Continuous retouch side scrapers

The two specimens are 27 mm and 40 mm long, 17 mm and 38 mm wide, and they have single continuous scraping edges 24 mm and 40 mm long with scraping face heights of 2 mm and 3 mm.

Irregular and continuous retouch side scraper

This single specimen is 22 mm long, 19 mm wide, and has two scraping edges 21 mm and 9 mm long with face heights of 1 mm.

RANDOM FLAKE SCRAPERS

The four examples of this scraper class all possess a single scraping edge. The lengths of these edges are 9 mm, 12 mm, 26 mm, and 32 mm.

Only three of the fifteen scrapers were made from Rossport flint.

Blanks

Two crude blanks of Rossport flint were found. Length, width, and thickness measurements are 72 mm and 79 mm, 45 mm and 45 mm, and 18 mm and 23 mm, respectively.

Linear Flakes

The two linear flakes have a medial ridge and approximately parallel sides. They measure 17 mm and 34 mm in length and 7 mm and 13 mm in width.

Cores

The single flint nodule core is of the bipolar variety, and the twenty cores of Rossport flint have natural fracture lines which give them a block-like appearance. It is the edge of the natural fracture face that is most frequently used as a striking platform. In addition, a single buff coloured core exhibiting random flake removal was found.

Chipping Detritus

In addition to the black Rossport flint and the usual nodular flints, a number of other varieties of silicious stones were found. A translucent material may well represent a colour variation of the Rossport flint. A buff coloured flint was present at one of the components and is from an unknown source. One large flake of green quartzite was found. Both quartz and taconite flakes were present.

In order to give a quantitative impression of the varieties of chipping detritus relative to purposefully shaped items, Table 28 was compiled. Only 13.7 per cent of the flaked stone possesses evidence of purposeful shaping, and this percentage would be substantially reduced if the large biface blades and blanks were excluded from the worked stone category. Also, only a sample of the Rossport flint chipping detritus was picked up from the site.

Table 28—WEIGHTS OF DETRITUS VARIETIES AND ARTIFACT CLASSES

Variety of detritus or artifact class	Weight in grams
Rosspport flint cores	1,613.0
Rosspport flint flakes	774.0
Quartzite flake	151.0
Nodular flint flakes with cortex adhering	55.3
Nodular flint flakes without cortex adhering	29.6
Buff flint core	149.7
Buff flint flakes	40.5
Translucent (Rosspport?) flint flakes	36.3
Nodular flint core	8.8
Quartz flakes	4.0
Taconite flakes	2.4
Linear flakes	1.7
Biface blades	173.4
Scrapers	136.0
Blanks	138.5
Projectile point	6.6
TOTAL	3,318.0

ROUGH STONE

Hammerstones, abraders, and paintstone nodules are included under the category of rough stone.

Hammerstone

A single cuboid pebble of Rosspport flint possesses hammering facets at one end.

Abraders (Plate X, fig. 2)

Of the two abraders found, one consists of a flat, angular sandstone fragment with grinding on one face and the other specimen consists of the sloughed-off surface of a long, narrow schistose fragment with a rectangular or square cross-section. The first specimen measures 49 mm by 43 mm with a thickness of 7 mm, and the second specimen measures 131 mm by 22 mm with a thickness of 1 mm.

Paintstone Nodule

A single, unmodified red ochre nodule was recovered.

NATIVE COPPER

The only copper item found consists of a crescent-shaped nugget which had been hammered out.

BONE

As only a few fragments of carbonized bone were recovered, it is inferred that soil conditions prevented the survival of this material.

THE EAKA SITE (EaKa - 3)

The site is located on a small clay island approximately two miles downstream from the Pelican Falls site on the English River. Before a dam raised the water level of the river, the island was connected to the nearby mainland by a narrow peninsula. The small amount of Laurel material recovered from the site rested on the surface of a rich Archaic deposit and under Late Woodland (Blackduck and Selkirk foci) and historic materials. Three 10-foot squares and several irregular units were excavated in the field season of 1962. All the material to be described, except a single rim sherd from an adjacent site, was recovered by excavation.

CERAMIC ANALYSIS

At least four vessels were represented in the Laurel component of the EaKa - 3 site.

Vessel 1 (Plate X, fig. 14)

A large rim sherd and a number of body sherds from this vessel were recovered. Short, oblique pseudo scallop shell impressions occur above a series of horizontal lines executed by the same technique. Under the horizontal design is a row of short, vertical pseudo scallop shell impressions which terminate the decorated portion of the vessel. The lip and the interior are both plain, and the rim profile is form 16. Lip thickness and thickness one inch below the lip are 3 mm and 6 mm, respectively. The eighteen body sherds attributed to the vessel range in thickness from 4 mm to 6 mm with a mean of 5.3 mm.

Vessel 2

Vertical notches occur on the exterior lip edge of the vessel above horizontal lines of pseudo scallop shell impressions. The lip and the interior are both plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are both 5 mm.

Vessel 3

The vessel is completely plain, lacking decoration on the exterior, interior, and lip. Rim profile is form 5. The lip thickness and thickness one inch below the lip are 5 mm and 6 mm, respectively.

Vessel 4

This vessel is represented by a single very small sherd. Decoration consists of short (4 mm), oblique pseudo scallop shell impressions ordered into at least three horizontal rows. Lip thickness is 4 mm, and lip and interior decoration are absent.

The twenty-three plain body sherds from the component range in thickness from 5 mm to 7 mm with a mean of 6.0 mm.

At another site (EaKa - 6), on the opposite point of land, a number of Laurel sherds were picked up from the erosional bank. The one rim (Plate X, fig. 15) consists of a plain sherd with exterior bosses which are separated from one another by exterior circular punctates. The lip and the interior of the rim are also plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are 4 mm and 6 mm. The bosses are 8 mm below the lip and are 6 mm apart with an intervening circular punctate.

THE LAC SEUL SITE (EbKb - 2)

The Lac Seul site is located on the south shore of Lac Seul opposite the Hudson's Bay Company post. During the survey of 1962, when the writer was on the lake, the site was submerged by high water. However, Laurel ceramics from this multicomponent site are in a collection owned by Mr. Dean Starratt of Hudson, Ontario. Mr. Starratt donated four rim sherds to the survey party, and their detailed description follows.

CERAMIC ANALYSIS

Vessel 1

The area directly below the lip of the rim is plain except for a row of exterior bosses. Below the bosses a series of horizontal pseudo scallop shell impressions occurs. The lip and the interior of the rim are plain, and the rim profile is form 5. The interior circular punctates that push out the exterior bosses occur 9 mm below the lip, are 9 mm apart, and have a diameter of 3 mm. Lip thickness and thickness one inch below the lip are 6 mm and 7 mm, respectively.

Vessel 2 (Plate X, fig. 16)

The exterior of the vessel is decorated with vertical pseudo scallop shell impressions above horizontals executed by the same technique. An encircling row of circular exterior punctates, which raise interior bosses, occurs between the two design elements. The lip is plain, and the interior rim is decorated with vertical rocker stamping. Rim profile is form 6. Lip thickness and thickness one inch below the lip are 4 mm and 7 mm. The exterior punctates occur 21 mm below the lip and are 12 mm apart; their diameter is 5 mm.

Vessel 3 (Plate X, fig. 18)

On the exterior rim, short pseudo scallop shell obliques are separated from horizontal lines of the same technique by an encircling row of exterior bosses

that are pushed out by interior circular punctates. In fact, the punctates have pushed right through the exterior bosses resulting in a line of circular holes. The lip and the interior of the rim are plain, and the rim profile is form 2. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm. The interior circular punctates are 8 mm below the lip and are 7 mm apart; their diameter is 2 mm.

Vessel 4 (Plate X, fig. 17)

A horizontal row of vertical to oblique fingernail impressions occurs below the lip and above an encircling row of exterior bosses which, in turn, is above another row of oblique fingernail impressions. The lip and the interior of the rim are plain, and the rim profile is form 3. The interior punctates have been obliterated by a final smoothing, although the bosses occur 12 mm below the lip and are irregularly spaced (7 mm to 11 mm). The lip thickness and the thickness one inch below the lip are 5 mm and 8 mm.

THE PICKEREL LAKE SITE

The following data are derived from material obtained by Dr. R. C. Dailey of the University of Toronto during his archaeological survey of the Canadian portion of Quetico Park. Pickerel Lake is located approximately sixteen miles to the southeast of Atikokan on the C.N.R. line.

CERAMIC ANALYSIS

Rim sherd fragments belonging to five vessels were recovered.

Vessel 1

On the exterior rim oblique dentate stamp occurs above circular punctates which raise interior bosses. Below the punctates is another row or more of oblique dentate stamp. The exterior lip edge is decorated with vertical dentate stamp, and oblique dentate stamp is present on the interior of the rim. Rim profile is form 17. Lip thickness and thickness one inch below the lip are 4 mm and 8 mm. The exterior punctates are 20 mm below the lip and 11 mm apart; their diameter is 3 mm.

Vessel 2 (Plate X, fig. 12)

The vessel is decorated with a row of oblique linear stamp above an encircling row of exterior bosses which are segregated from one another by semi-circular exterior punctates. Below the row of bosses and punctates there are at least two more horizontal rows of oblique linear stamp. The interior punctates are circular. The lip and the interior of the rim are plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are 5 mm and 6 mm, respectively. The exterior punctates occur 13 mm below the

lip and are 10 mm apart with an intervening boss. Both the interior and the exterior punctates are 4 mm in diameter.

Vessel 3

A row of short, vertical linear stamp occurs above horizontal lines of pseudo scallop shell impressions on this vessel. The lip and the interior of the rim are plain, and the rim profile is form 7. Lip thickness and thickness one inch below the lip are 3 mm and 5 mm.

Vessel 4 (Plate X, fig. 13)

Horizontal rows of oblique linear punctate represent the sole decoration on this vessel. The lip and the interior of the rim are plain, and the rim profile is form 3. Lip thickness and thickness one inch below the lip are 3 mm and 6 mm.

Vessel 5

The decoration on the exterior of this rim is the same as found on vessel 4, although a slightly different tool has been used. The interior and the lip of the rim are both plain, and the rim profile is form 1. Lip thickness and thickness one inch below the lip are 3 mm and 4 mm, respectively.

Of the twenty body sherds recovered, fourteen are plain, four are decorated with pseudo scallop shell impressions, and two are decorated with linear punctate. The plain sherds range from 4 mm to 7 mm in thickness with a mean of 5.5 mm. Three of the pseudo scallop shell impressed sherds possess a concave exterior suggesting that they come from near the rim of the vessel. Two of these sherds have horizontal rows of short, oblique pseudo scallop shell impressions whereas the remaining sherd has continuous horizontal lines and rows of obliques. The final sherd has oblique pseudo scallop shell impressions above a plain area. The three intact sherds are each 5 mm thick. On the two linear punctate sherds the rows appear to run horizontally. The thicknesses of the sherds are 5 mm and 6 mm.

THE HUNGRY HALL SITE

The Hungry Hall site is located near the mouth of the Rainy River across from the state of Minnesota. Mr. W. A. Kenyon of the Royal Ontario Museum has excavated a Late Woodland burial mound on the site (Kenyon, 1960) and has kindly allowed the writer to analyse the Laurel ceramics obtained from the mound fill. Only rim sherds are considered in the following description.

CERAMIC ANALYSIS

Table 29 presents the rim sherd classification, based on decorative technique, for the thirty-seven rim sherds examined.

Table 29—RIM SHERD CLASSIFICATION

Technique	f	%
Dentate stamp	11	29.7
Dragged stamp	8	21.6
Linear punctate	6	16.2
Plain	6	16.2
Pseudo scallop shell	4	10.8
Linear stamp	1	2.7
Incised	1	2.7
TOTALS	37	99.9

Dentate Stamp

Technique

A further statement on the technique of dentate stamping is felt to be necessary to supplement the general technique description given for the Heron Bay site. Although the dentate stamp found on the Hungry Hall site rims is similar to that noted on the Heron Bay site rims, there are some differences. At the site currently under examination the dentate impressions are of a very narrow rectilinear form and are very closely spaced. Much of the stamp would probably form pseudo scallop shell impressions if the tool had been impressed in a lateral fashion. Because of the variations in application it is frequently difficult to determine whether a dentate, a pseudo scallop shell, or a combination of the two impressions is involved. In short, what is being called a dentate stamp almost appears to be transitional between what is generally regarded as dentate stamp and pseudo scallop shell.

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques or verticals above horizontals	6
Two or more horizontal rows of short obliques	2
Criss-cross above horizontals	1
One row of obliques above a plain area above horizontals	1
One row of obliques	1
	11

<i>Lip decoration</i>	<i>f</i>
Absent	8
Oblique pseudo scallop shell	2
Obliques	1
	11

<i>Interior decoration</i>	<i>f</i>
Absent	5
Verticals	2

Obliques	2
Oblique pseudo scallop shell	2

11

Punctates

Exterior (interior bosses)	10
Interior (exterior bosses)	1

11

Punctate form

Ovate	4
Rectanguloid	2
Square	2
Ovate acuminate	1
Circular	1
Destroyed	1

11

Rim profiles

Rim profile varieties are illustrated on Figure 3. Frequencies of varieties within the dentate stamp category are as follows: 6 form 5; 2 form 6; 1 form 18; 1 form 19; and 1 form 20.

Metrical data

	f	Range (mm)	Mean (mm)
Lip thickness	11	3-7	4.9
Thickness one inch below lip	11	4-7	5.7
Distance of exterior punctates below lip	10	6-15	12.0
Distance between exterior punctates	7	8-26	12.0
Vertical length of exterior punctates	8	3-7	5.3

Dragged Stamp

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of oblique dragged stamp	6
Horizontal rows of vertical dragged stamp	1
One row of vertical dragged stamp	1

8

Lip decoration

Absent	6
Vertical dragged stamp	1
Oblique dragged stamp	1

8

85

<i>Interior decoration</i>	<i>f</i>
Absent	8
<i>Punctates</i>	<i>f</i>
Exterior (interior bosses) ..	8
<i>Punctate form</i>	<i>f</i>
Ovate	2
Irregular	2
Rectanguloid	2
Ovate acuminate ..	1
Elliptical	1
	8

Rim profiles

Of the varieties of rim profiles illustrated on Figure 3 the following frequencies were present: 1 form 1; 4 form 5; 1 form 6; 1 form 9; and 1 form 21.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	8	3-8	5.0
Thickness one inch below lip	8	6-8	6.9
Distance of exterior punctates below lip	8	7-14	10.1
Distance between exterior punctates	6	7-12	9.7
Width of bands of dragged stamp	7	5-8	6.7
Vertical length of exterior punctates	8	5-8	6.1

Linear Punctate

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of vertical dragged punctates	3
Horizontal rows of oblique dragged punctates ..	2
Oblique rows of vertical dragged punctates ..	1
	6

<i>Lip and interior decoration</i>	<i>f</i>
Absent	6

<i>Punctates</i>	<i>f</i>
Exterior (interior bosses) ..	4
Exterior (no interior bosses) ..	1
Absent (interior bosses) ..	1
	6

<i>Punctate form</i>	<i>f</i>
Rectangular	2
Ovate	1
Square	1
Irregular	1
	5

Rim profiles

Rim profile varieties were represented by the following frequencies: 1 form 1; 3 form 5; 1 form 20; and 1 form 23.

Red ochre wash on rim exterior and lip

One rim has a red ochre wash on the lip.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	6	4-8	5.5
Thickness one inch below lip	6	4-8	6.7
Distance of exterior punctates below lip	5	10-16	12.8
Distance between exterior punctates	5	5-15	9.8
Vertical length of exterior punctates	5	5-10	6.8

Plain

These rims lack decoration except for the encircling punctates and bosses.

Punctates

	<i>f</i>
Exterior (interior bosses)	4
Exterior (no interior bosses)	1
	5

Punctate form

	<i>f</i>
Ovate	2
Rectanguloid	2
Destroyed	1
	5

Rim profiles

Rim profile varieties were represented by the following frequencies: 5 form 5; and 1 form 6.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	6	3-6	5.0
Thickness one inch below lip	6	5-8	6.3
Distance of exterior punctates below lip	5	8-12	10.0
Distance between exterior punctates	3	7-13	9.0
Vertical length of exterior punctates	4	4-7	5.3

Pseudo Scallop Shell

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques above horizontals	1
Horizontals	1
Two or more horizontal rows of obliques	1
Blank space above horizontals	1
	—
	4
<i>Lip decoration</i>	<i>f</i>
Absent	4
<i>Interior decoration</i>	<i>f</i>
Absent	2
Obliques	1
Oblique dragged stamp	1
	—
	4
<i>Punctates</i>	<i>f</i>
Exterior (interior bosses)	2
Exterior (no interior bosses)	2
	—
	4
<i>Punctate form</i>	<i>f</i>
Rectanguloid	2
Ovate acuminate	1
Inverted V	1
	—
	4
<i>Rim profiles</i>	
Rim profile varieties were represented by the following frequencies: 1 form 1; 2 form 5; and 1 form 6.	

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	4	3-5	4.3
Thickness one inch below lip	4	5-8	6.5
Distance of exterior punctates below lip	4	7-26	14.0
Distance between exterior punctates	3	6-12	9.7
Vertical length of exterior punctates	4	2-6	4.5

Linear Stamp

The motif on this single specimen consists of a row of oblique linear stamp above horizontal rows of vertical linear stamp. An encircling row of exterior square punctates which raise interior bosses is present. Both the lip and the interior of the rim are plain, and the rim profile is form 2. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm, respectively. The exterior punctates occur 14 mm below the lip and are 12 mm apart. Their vertical length is 3 mm.

Incised

Widely spaced vertical incised lines and an encircling row of ovate exterior punctates which do not raise interior bosses represent the exterior motif of this rim. Both the lip and the interior are plain, and the rim profile is form 1. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm. The encircling punctates occur 17 mm below the lip and are 3 mm apart. The vertical height of the punctates is 3 mm.

THE LONG SAULT SITE

The Long Sault site, also referred to as the Armstrong site, is located on the Rainy River at the Long Sault rapids. In the 1960 field season the writer made only a cursory examination of the site as Mr. W. A. Kenyon of the Royal Ontario Museum had previously worked on the station and was planning future exploration. The site is quite large and contains abundant evidence of a Late Woodland and Middle Woodland occupancy as well as slight evidence of an Archaic component. During the brief examination, eight burial mounds were noted, and almost certainly additional mounds were overlooked. The mounds pertain to both the Late Woodland and Middle Woodland components (Plate XI). In view of the writer's limited experience with Laurel mounds and the fact that Mr. Kenyon has been carrying out a research program concentrating on these features, a description of the mounds will not be attempted. Suffice it to say that the Laurel mounds in the Rainy River area are generally of greater dimensions than the following Late Woodland mounds and may attain a height of twenty-four feet (Kenyon, 1960). A sample of the small amount of Laurel material recovered from the surface of the site is illustrated on Plate X, figs. 6 to 11. The material to be described consists of rim sherds collected from the surface of the site by Mr. Kenyon.

CERAMIC ANALYSIS

Table 30 presents the rim sherd classification for the twenty-seven rim sherds recovered from the surface of the Long Sault site.

Table 30—RIM SHERD CLASSIFICATION

Technique	f	%
Pseudo scallop shell	10	37.0
Plain	7	25.9
Dragged stamp	4	14.8
Linear punctate	2	7.4
Incised	1	3.7
Dentate stamp	1	3.7
Pseudo scallop shell and dragged stamp	1	3.7
Pseudo scallop shell and punctate	1	3.7
TOTALS	27	99.9

Pseudo Scallop Shell

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
One row of obliques or verticals above horizontals	6
Blank space above horizontals	2
Horizontals	1
One row of obliques	1
	—
	10
<i>Lip decoration</i>	<i>f</i>
Absent	6
Obliques	4
	—
	10
<i>Interior decoration</i>	<i>f</i>
Absent	10
<i>Punctates</i>	<i>f</i>
Interior (exterior bosses)	3
Exterior and interior (exterior bosses)	2
Exterior (no interior bosses)	1
Exterior (interior bosses)	1
Exterior and interior (exterior and interior bosses)	1
	—
	8
<i>Punctate form</i>	<i>f</i>
Circular	4
Circular (reed or hollow bone)	1
	—
	5

Rim profiles

The frequencies of rim profile varieties are as follows: 1 form 1; 6 form 5; 1 form 6; 1 form 7; and 1 form 22.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	10	3-7	5.1
Thickness one inch below lip	10	5-9	6.3
Distance of exterior punctates below lip	5	11-16	13.4
Distance between exterior punctates	5	1-9	5.8
Vertical length of exterior punctates	5	3-4	3.8

Plain

These rims lack decoration except for the encircling punctates and bosses.

<i>Punctates</i>	<i>f</i>
Exterior and interior (exterior bosses)	2
Interior (exterior bosses)	2
Exterior (interior bosses)	1
Exterior and interior (exterior and interior bosses)	1
Two horizontal rows exterior and interior (exterior bosses)	1
	7

<i>Punctate form</i>	<i>f</i>
Circular	3
Ovate	1
Ovate acuminate	1
	5

Rim profiles

Rim profile varieties are represented by the following frequencies: 1 form 1; 1 form 4; 2 form 5; 1 form 6; and 2 form 20.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	7	3-6	4.4
Thickness one inch below lip	7	4-7	5.7
Distance of exterior punctates below lip	5	6-13	9.6
Distance between exterior punctates	5	4-11	7.4
Vertical length of exterior punctates	5	3-6	4.8

Dragged Stamp

<i>Motif exclusive of punctates and bosses</i>	<i>f</i>
Horizontal rows of oblique dragged stamp	3
Horizontal rows of vertical dragged stamp	1
	4

<i>Lip and interior decoration</i>	<i>f</i>
Absent	4

<i>Punctates</i>	<i>f</i>
Exterior (interior bosses)	3
Exterior (no interior bosses)	1
	4

<i>Punctate form</i>	<i>f</i>
Ovate	1
Rectangular	1
Circular	1
Destroyed	1
	4

Rim profiles

Rim profile varieties are represented by the following frequencies: 3 form 5; and 1 form 24.

Metrical data

	<i>f</i>	Range (mm)	Mean (mm)
Lip thickness	4	4-6	5.0
Thickness one inch below lip	4	5-6	5.8
Distance of exterior punctates below lip	4	14-17	13.8
Distance between exterior punctates	3	9-14	10.7
Width of bands of dragged stamp	4	4-9	6.5
Vertical length of exterior punctates	3	3-8	5.3

Linear Punctate

Both these specimens were represented by nearly complete vessels.

Vessel 1 possesses horizontal rows of linear punctate which extend 151 mm below the lip. Exterior ovate punctates encircle the vessel and raise a row of interior bosses. The lip is decorated with an encircling row of punctates, and the interior is plain. Rim profile is form 25. Lip thickness and thickness one inch below the lip are 9 mm and 7 mm, respectively. The encircling line of punctates occurs 31 mm below the lip; the punctates are 44 mm apart. Their vertical height is 6 mm. The orifice diameter of the vessel is 242 mm or approximately 9.5 inches.

Vessel 2 possesses horizontal rows of linear punctate which extend 116 mm below the lip. The lip of the vessel is decorated with encircling punctates, and the interior is plain. Rim profile is form 5. Lip thickness and thickness one inch below the lip are 6 mm and 7 mm. The orifice diameter is 216 mm or approximately 8.5 inches.

Incised

This single rim has one horizontal incised line below which a row of incised criss-cross occurs. In the upper crotch of the criss-cross, exterior bosses are present. Both the lip and the interior are plain, and the rim profile is form 1. Lip thickness and thickness one inch below the lip are both 6 mm. The bosses occur 11 mm below the lip and are 13 mm apart.

Dentate Stamp

A row of verticals occurs above a series of horizontals on this rim. Both the lip and the interior are plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are 4 mm and 5 mm, respectively.

Pseudo Scallop Shell and Dragged Stamp

A row of oblique pseudo scallop shell impressions occurs above horizontal rows of oblique dragged stamp on this rim, and a row of punctate segregated exterior bosses separates the two designs. Both the lip and the interior are plain, and the rim profile is form 21. Lip thickness and thickness one inch below the lip are 6 mm and 4 mm respectively. The exterior circular punctates are 16 mm below the lip and are .5 mm apart.

Pseudo Scallop Shell and Punctate

Short, oblique pseudo scallop shell impressions occur above horizontal impressions made with the same tool and above rectangular zones which are filled with oblique punctates. The lip and interior of the rim are both plain, and the rim profile is form 5. Lip thickness and thickness one inch below the lip are 6 mm and 5 mm, respectively.

THE SWAN LAKE SITE

The Swan Lake site is located on the Winnipeg River drainage near the Manitoba border. It was excavated and reported upon by Mr. W. A. Kenyon (1961). Both Late Woodland (Selkirk and Blackduck foci) and Middle Woodland components were represented at the site. Thirty-six rim sherds, representing over thirteen per cent of the total rims from the site, are attributed to Laurel. These will be examined at a general level along with some of the lithic traits in the chapter on comparisons.

In the preceding examination of sixteen Laurel Tradition components in Northern Ontario a body of data is available which allows a synoptic statement of the major characteristics of the tradition. Such a statement, of course, will be subject to modification with the advent of new data.

Of all the traits, the ceramics are the most effective in assigning components to the Laurel Tradition. Not only are many of the ceramic attributes unique to the tradition, but a substantial number exhibit a homogeneity which is quite surprising when one considers the extensive area involved. Of the lithic traits, the scrapers, with their wide variation and abundance, are the next most diagnostic artifact class, although the projectile points, paintstone nodules, linear flakes, and biface blades are certainly of significance. The paintstone nodules, however, as with the native copper artifacts, should not be over-emphasized since they may simply reflect the availability of the raw substances and, as such, turn out to be regional characteristics. There are a number of other traits, such as end-notched netsinkers and linear hammerstones, which are of lesser importance quantitatively. These, however, may well be critical at the qualitative level. Bone traits such as the obliquely ground beaver incisor

tools and the socketed harpoon heads are diagnostic, although their value is limited by the generally poor preservation of bone.

On a more general level there are a number of elements which appear to be relatively characteristic of the Laurel Tradition components. Sites are generally small, and they rarely produce deposits that can be profitably excavated. An important exception to this situation is the large components of the Rainy River area which are also the only sites to possess burial mounds. Subsurface features are rare, and they generally consist of simple firestone concentrations interpreted as hearths. What little subsistence data are available suggests an economy centered on the hunting of moose and beaver, although regional and seasonal factors could play havoc with such a general observation, based as it is on very limited information. A characteristic that is difficult to qualify is the nature of the cultural debris itself. Large flakes, bone fragments, artifacts, and artifact fragments are rare in contrast to the preceding Archaic and following Late Woodland assemblages. Very small tools are abundant, and the lithic and bone refuse have generally been reduced to minute fragments. In short, there appears to have been an extensive utilization of the raw materials with very little wastage. Of great importance is the virtually complete cultural discontinuity between the Laurel Tradition and the indigenous Archaic manifestations. This situation is quite contrary to that noted in the east with reference to the Point Peninsula and Saugeen foci. Such a discontinuity strongly suggests that the Laurel Tradition moved into the area as an integrated complex and that it is not the product of multiple trait graftings onto an Archaic stock. The degree of homogeneity of the Laurel Tradition in Northern Ontario, Minnesota, and Manitoba adds support to the view that, in large part, population movements are involved and not simply a complex series of trait diffusions.

CHAPTER THREE

Comparisons

Comparisons are first drawn between the previously described Laurel components of Northern Ontario, and then their relationship to Laurel manifestations in Manitoba, Minnesota, and Saskatchewan is examined. A preliminary attempt is made to establish a chronological ordering within the Laurel Tradition on the basis of seriation analysis. Such an ordering, it must be stressed, is very tenuous and will be subject to modification with the increase of data. The Laurel Tradition is then compared, at a general level, to the Point Peninsula and Saugeen foci to the east.

Before proceeding to the comparative examination, however, the limited number of radiocarbon readings pertinent to the Laurel Tradition should be considered. There are six dates: three from Minnesota (Johnson, 1964) and three from Ontario. It should be mentioned that only the Donaldson site date was available when the following comparative section was written.

The dates are as follows:

MINNESOTA	—	Anderson site,	200 B.C. $\pm$ 180 (I-786)
		Morrison Mound 13,	690 B.C. $\pm$ 200 (I-787)
		High Island site,	A.D. 450 $\pm$ 150 (I-788)
ONTARIO	—	Donaldson site,	530 B.C. $\pm$ 60 (S-119)
		Sand River site,	A.D. 320 $\pm$ 100 (M-1507)
		Heron Bay site,	A.D. 610 $\pm$ 170 (GSC-208) ¹

Of these sites only the Sand River and Heron Bay sites are Laurel components, and the date from the latter site is regarded as being much too recent. The charcoal sample was small and the association was poor, but because of the importance of the Heron Bay site the submission of the sample was regarded as justified. The Donaldson site is a Saugeen focus component which possessed Laurel ceramics and other traits in direct association with the major cultural assemblage (Wright and Anderson, 1963, p. 52). Similarly, the three sites in Minnesota are all assigned to the Malmo focus which Wilford has stated, with reference to the ceramics, "has an intermediate position between Howard Lake and Laurel wares and is clearly Laurel's closest relative in Minnesota" (Wilford, 1955, p. 135). As the Howard Lake focus is the Hopewell manifestation in Minnesota, the Malmo focus is regarded as an equivalent of the Point Peninsula and Saugeen foci to the east in that the ceramics appear to be the product of a blending between the Laurel and Hopewell traditions.

Although the radiocarbon data pertinent to the Laurel Tradition are, as yet, too limited and diffuse to be effectively related to the chronology, they do

¹Three more unacceptable radiocarbon dates from the Heron Bay site were available by the time the galleys were received. One date on a small, poorly associated charcoal sample gave a reading of A.D. 410 $\pm$ 160 (GSC-445), and two samples of charred bone gave readings of A.D. 700 $\pm$ 60 (S-171) and A.D. 790 $\pm$ 130 (GSC-449).

suggest two extremely important facts. First, that Laurel and Laurel-like ceramics possess an antiquity far in excess of earlier estimates, and secondly, that the time span in which Laurel and related assemblages are involved extends through approximately 1,000 years. The apparent early beginnings and persistence of the Laurel Tradition are factors which are critical to the proposed role played by the tradition. Until more radiocarbon dates are available from Laurel components, however, the absolute chronology of the Laurel Tradition must remain at a tenuous level.¹

Northern Ontario Laurel Components

In the preceding chapter, sixteen components of the Laurel Tradition in Northern Ontario have been examined. The amount and the nature of the information acquired from these components have been variable, and the comparative units are therefore not consistent in all respects. As a result, only certain components could be used for certain types of comparative purposes. Small samples and incomplete samples were the two major factors in limiting the comparative value of some of the components.

A brief statement can be made on the geographic character of site locations, soil characteristics, elevations, and features. Six sites are located along a lake shore, five along river systems, and five at the mouths of rivers or streams at their embouchure into a lake. Two of the sites along river systems were also located adjacent to major rapids. Ten sites were situated on sandy soil, and the remainder occurred on clay. For five of the seven sites along the north shore of Lake Superior, where isostatic rebound is prevalent, elevations above summer water level are available as follows: Sand River (5 feet); Heron Bay (8 feet); Little Pic River (12 feet); Rossport (12 feet); and MacKenzie River (6 feet). Excavation suggests that features are a relatively rare occurrence on Laurel sites in Northern Ontario. At the Heron Bay site a tenuous house structure, four hearths consisting of concentrations of fire-fractured rocks, and one tree-fall used as a refuse pit represented the sum total of features encountered. A complex hearth was excavated at the Sand River site, and two firestone concentrations, interpreted as hearths, were found at the Killala Lake site. In addition to excavated features there are the large burial mounds of the Long Sault or Armstrong site on the Rainy River.

The general artifact category comparisons are given on Table 31 for eight of the sites. The Hungry Hall, Long Sault, Pelican Falls, McLaren, Pickerel Lake, Swan Lake, Lac Seul, and Eaka sites are excluded from the table on the basis of insufficient information and/or the difficulty of isolating corresponding traits from stratified sites. Chipping detritus, cores, and blanks have not been included as traits on the table. All figures represent the frequency of the trait including fragments, and the ordering of the components runs geographically from east to west.

¹A small sample of carbon scraped from the interiors of Heron Bay site sherds was submitted to the Geological Survey of Canada on June 24, 1966. The reading on this sample was 1810 ± 150 years (G.S.C.—686) or A.D. 140.

Table 31—GENERAL ARTIFACT TRAIT LIST FOR EIGHT NORTHERN ONTARIO LAUREL COMPONENTS

Trait	Sand River	Michipicoten Harbour	Heron Bay	Little Pic River	Killala Lake	Rosport	Pays Plat	MacKenzie
Sherds	8	11	2,739	34	74	13	47	31
Ceramic wastage	—	—	33	—	—	—	—	—
Scrapers	2	4	598	6	31	15	39	2
Projectile points	—	—	46	3	3	1	1	—
Biface blades	—	1	39	2	8	9	1	—
Lances or knives	—	—	2	—	—	—	—	—
Linear flakes	—	—	58	2	7	2	2	1
Scraper tools	—	—	5	—	2	—	—	—
Hammerstones	—	1	21	—	4	1	2	—
Netsinkers	—	—	20	—	—	—	14	—
Abraders	—	3	21	—	—	2	11	—
Paintstone nodules	—	—	544	5	1	1	1	—
Mano	—	—	1	—	—	—	—	—
Ground slate knives	—	—	3	—	—	—	—	—
Gouge-like implement	—	—	1	—	—	—	—	—
Steatite block	—	—	1	—	—	—	—	—
Copper beads	—	—	34	1	1	—	—	—
Copper bars	—	—	28	—	1	—	—	—
Copper awls	—	—	26	1	—	—	—	—
Copper barbs	—	—	12	—	1	—	—	—
Copper bangles	—	—	11	—	—	—	—	—
Copper chisels	—	—	3	—	—	—	—	—
Copper scrapers	—	—	2	—	—	—	—	—
Copper projectile points	—	—	1	—	1	—	—	—
Copper pendant	—	—	1	—	—	—	—	—
Copper problematical	—	—	1	—	—	—	—	—
Copper flakes	—	—	80	3	2	—	—	—
Copper nuggets	—	—	31	—	—	1	1	—
Beaver incisor tools	NBP	NBP	21	—	PBP	NBP	NBP	NBP
Bone Awls	NBP	NBP	13	—	1	NBP	NBP	NBP
Harpoon Heads	NBP	NBP	3	—	PBP	NBP	NBP	NBP
Netting needles	NBP	NBP	2	—	PBP	NBP	NBP	NBP
Bone pendants	NBP	NBP	2	—	PBP	NBP	NBP	NBP
Bone beads	NBP	NBP	2	—	PBP	NBP	NBP	NBP
Bone pottery markers	NBP	NBP	2	—	PBP	NBP	NBP	NBP
Worked incisor	NBP	NBP	1	—	PBP	NBP	NBP	NBP
Bone problematical	NBP	NBP	1	—	PBP	NBP	NBP	NBP
Shell beads	—	—	2	—	—	—	—	—

NBP—No bone preservation.

PBP—Poor bone preservation.

As can be seen from Table 31, the most characteristic traits of the Laurel Tradition sites in Northern Ontario are sherds, scrapers, paintstone nodules (more than 500 specimens each), copper flakes, linear flakes, biface blades, projectile points (more than 50 specimens each), abraders, copper beads, netsinkers, ceramic wastage, and copper nuggets (more than 30 specimens each). Of these twelve traits, sherds and scrapers were found on all sites; biface blades

and linear flakes on six sites; projectile points and paintstone nodules on five sites; abraders on four sites; copper flakes, beads, and nuggets on three sites; netsinkers on two sites; and ceramic wastage on one site.

In attempting to establish a tentative chronology for the Laurel Tradition in Northern Ontario only four sites could be used. These sites are Heron Bay, Pelican Falls, Long Sault, and Hungry Hall, and their value for chronological purposes rests in their rim sherd samples. The rim sherd, with its large number of quantifiable and qualifiable attributes and its frequency on sites, is regarded as the best single artifact from which to draw temporal and spatial inferences. Five attributes consisting of exterior motif and technique exclusive of encircling punctates and bosses, lip decoration, interior decoration, encircling punctates and bosses, and rim profiles are considered in the comparisons. In order to avoid the large body of comparative data involved (which can be obtained from Chapter 2), the comparisons have been reduced to coefficients of similarity. Table 32 presents the coefficients for the five attributes of the rim sherds from the four sites.

Table 32 — COEFFICIENTS OF SIMILARITY FOR RIM SHERD ATTRIBUTES FROM FOUR LAUREL TRADITION SITES

	Heron Bay					Pelican Falls					Long Sault					Hungry Hall				
	Exterior Motif	Punctates	Profiles	Lip Motif	Interior Motif	Exterior Motif	Punctates	Profiles	Lip Motif	Interior Motif	Exterior Motif	Punctates	Profiles	Lip Motif	Interior Motif	Exterior Motif	Punctates	Profiles	Lip Motif	Interior Motif
Heron Bay	Exterior Motif	/	/	/	/	160					130					84				
	Punctates	/	/	/	/		92					64					51			
	Profiles	/	/	/	/			164					112					121		
	Lip Motif	/	/	/	/				183					162					188	
	Interior Motif	/	/	/	/					172					162					167
Pelican Falls	Exterior Motif	160				/	/	/	/	/	130					92				
	Punctates		92			/	/	/	/	/		114					123			
	Profiles			164		/	/	/	/	/			100					115		
	Lip Motif				183	/	/	/	/	/				161					173	
	Interior Motif					172	/	/	/	/					160					173
Long Sault	Exterior Motif	130				130					/	/	/	/	/	110				
	Punctates		64				114				/	/	/	/	/		69			
	Profiles			112				100			/	/	/	/	/			155		
	Lip Motif				162				161		/	/	/	/	/				166	
	Interior Motif					162				160	/	/	/	/	/					157
Hungry Hall	Exterior Motif	84				92					110					/	/	/	/	/
	Punctates		51				123					69				/	/	/	/	/
	Profiles			121				115					155			/	/	/	/	/
	Lip Motif				188				173					166		/	/	/	/	/
	Interior Motif					167				173					157	/	/	/	/	/

NOTE: Motif includes technique and design. Punctates include boss producing and non-boss producing.

The degrees of relationship expressed on Table 32 suggest that the Heron Bay site is most similar to the Pelican Falls site and least similar to the Hungry Hall site. While the coefficients are not entirely consistent in this suggested relationship of the sites, it represents the most suitable arrangement that the writer can achieve. Also, the five rim sherd attributes used to form the coefficients appear to possess different degrees of significance. This is expressed in the 'spread' of coefficients for any single attribute at the four sites considered. For example, exterior motif, encircling punctates, and rim profiles have differences in coefficients of 76, 72, and 64, respectively, whereas lip motif and interior motif have differences of 27 and 16, respectively. It is inferred that the wider the spread of coefficients for any attribute the more likely it is that the attribute will possess spatial and temporal significance. For this reason, the coefficients for the exterior rim motifs, the encircling punctates, and the rim profiles are given greater weight than the coefficients for the lip and interior motifs. Both rim motif and punctates suggest that the closeness of relationship of the Heron Bay site is to Pelican Falls, Long Sault, and Hungry Hall. The profile coefficients would, however, place the Hungry Hall site closer to Heron Bay than to Long Sault. On the basis of the coefficients it is inferred that the closeness of relationship runs from Heron Bay to Pelican Falls to Long Sault to Hungry Hall. A major problem exists in determining the chronological relationship of the four sites. It is proposed that bossing, either exterior or interior, or both, is a late Laurel ceramic attribute relative to the non-boss producing encircling punctates. This view is supported by the following: the evidence that the Late Woodland Blackduck focus, with its interior bossed pottery, developed directly out of Laurel (G. Edward Evans: pers. comm.); the absence of bossing but presence of encircling punctates on the nine Laurel rims found on the Saugeen focus Donaldson site which has a radiocarbon date of 530 ± 60 B.C. (S-119) (Wright and Anderson, 1963, p. 50); and the appearance of the Wickham Punctate pottery type (Ritchie and MacNeish, 1949, p. 104) with its interior bosses, which is regarded as one of the evidences of the fusion between Laurel and Hopewell to form the Point Peninsula 2 focus of the Northeast. If it is correct to assume that bossing is an attribute of Laurel ceramics which increases through time, then the ordering of sites from early to late would be Heron Bay (10 per cent bossed rims), Pelican Falls (51 per cent bossed rims), Long Sault (74 per cent bossed rims), and Hungry Hall (84 per cent bossed rims). This chronology corresponds to the relationship of the four sites as determined by the coefficients of similarity for rim sherd attributes.

Using the bossing attribute as a late marker, the remaining twelve sites from Northern Ontario may be segregated as follows: early (Pays Plat, Little Pic River, Eaka); intermediate (MacKenzie, Pickerel Lake); late (Killala Lake, Sand River, McLaren, Lac Seul, Swan Lake); indeterminate (Rossport, Michipicoten Harbour). Such a rough arranging of the sites, however, is very tentative if only because of the number of sherds involved. And while the available evidence does suggest that bossing is a late attribute of Laurel ceramics, possible unknown temporal and spatial variations of the attribute could be very disruptive to the proposed chronology. The following

chronological trends, therefore, hinge directly on the assumption that bossing is a relatively stable attribute which increases in frequency with time.

Table 33 — RIM SHERD SERIATION FOR FOUR LAUREL COMPONENTS IN NORTHERN ONTARIO

Site	Pseudo scallop shell	Dragged stamp	Linear punctate	Dentate stamp	Plain	Pseudo scallop shell and linear punctate	Pseudo scallop shell and dragged stamp	Dragged stamp and linear punctate	Punctate	Dentate stamp and pseudo scallop shell	Pseudo scallop shell, dragged stamp, and linear punctate	Linear stamp and linear punctate	Incised	Pseudo scallop shell and punctate	Linear stamp	Miscellaneous	Total
Hungry Hall	10.8 (4)	21.6 (8)	16.2 (6)	29.7 (11)	16.2 (6)	-	-	-	-	-	-	-	2.7 (1)	-	2.7 (1)	-	99.9 (37)
Long Sault	37.0 (10)	14.8 (4)	7.4 (2)	3.7 (1)	25.9 (7)	-	3.7 (1)	-	-	-	-	-	3.7 (1)	3.7 (1)	-	-	99.9 (27)
Pelican Falls	51.1 (23)	22.2 (10)	4.4 (2)	-	6.7 (3)	6.7 (3)	-	-	-	-	-	4.4 (2)	2.2 (1)	-	-	2.2 (1)	99.9 (45)
Heron Bay	47.2 (58)	23.6 (29)	5.7 (7)	4.0 (5)	-	4.9 (6)	4.0 (5)	3.3 (4)	1.6 (2)	1.6 (2)	1.6 (2)	-	-	-	-	2.4 (3)	99.9 (123)
TOTALS	146.1 (95)	82.2 (51)	33.7 (17)	37.4 (17)	48.8 (16)	11.6 (9)	7.7 (6)	3.3 (4)	1.6 (2)	1.6 (2)	1.6 (2)	4.4 (2)	8.6 (3)	3.7 (1)	2.7 (1)	4.6 (4)	399.6 (232)

The above table indicates some significant trends, through time, in the techniques of decorating the exterior rim of the vessel, and it adds support to the trend seen in the bossing attribute. For the five dominant decorative techniques these trends are as follows: pseudo scallop shell decreases from early to late; dragged stamp remains relatively constant; linear punctate, dentate stamp, and absence of decoration increase from early to late. It may not be completely fortuitous that the decreasing pseudo scallop shell technique is the only technique of the five that is entirely absent from the following Late Woodland ceramic complexes of the same general area. In addition, it may be noted that the combination of pseudo scallop shell and linear punctate is restricted to the earlier portion of the sequence as are a number of other minor combinations of techniques and that incising is poorly represented throughout the development.

The metrical data for five rim sherd attributes from the four sites with large ceramic samples show some interesting trends through time. The figures on Table 34 represent the total rim sherd sample from each site and indicate more clearly the dimensional changes of rim sherd attributes through time than do the individual metrical tables for each rim sherd variety.

The metrical changes of lip thickness and thickness one inch below the lip through time appear to be relatively insignificant, although there is an indication that the lips are becoming thicker. The remaining three attributes, however, show significant trends through time. There is a steady decrease in the distance of the encircling line of punctates below the lip and a marked increase

Table 34—METRICAL DATA FOR FIVE RIM SHERD ATTRIBUTES

Site	Attribute (f)	Lip thickness (mm)		Thickness one inch below lip (mm)		Distance of punctates below lip (mm)		Distance between punctates (mm)		Vertical length of punctates (mm)	
		Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean
Hungry Hall	(37)	3-8	4.9	4-8	6.3	6-26	11.7	3-26	10.2	2-10	5.5
Long Sault	(27)	3-9	5.1	4-9	5.9	6-31	12.7	4-44	9.8	3-8	4.5
Pelican Falls	(45)	2-7	4.1	4-8	6.5	8-19	13.5	3-12	6.0	2-7	3.8
Heron Bay	(123)	2-6	4.1	4-10	6.8	6-36	14.6	2-10	5.1	2-8	3.8

in the distance between individual punctates. Finally, the vertical length of the punctates becomes greater through time. The importance of the encircling line of punctates, with or without bosses, as a temporal and perhaps spatial indicator on Laurel ceramics is supported by both form variations and metrical variations.

Body sherd comparisons were limited to the Heron Bay and Pelican Falls sites (Tables 6 and 17) where adequate sherd samples were available. The close relationship between these sites, which was indicated by the rim sherd comparisons, is supported by the body sherd comparisons where a coefficient of similarity of 175 was obtained. A difference can be seen in sherd thicknesses between the two sites where the Heron Bay sherds were approximately one millimetre thicker than the Pelican Falls sherds. This excludes the Laurel basal sherds at both sites and the Saugeen focus and Early Woodland sherds at the Heron Bay site which were thicker. It is interesting, in terms of the significance of sherd thickness, that the five Saugeen focus sherds from the latter site stand in contrast to the thicknesses of the Laurel sherds in the exact same manner that the nineteen Laurel sherds stand in contrast to the Saugeen sherds at the Saugeen focus Donaldson site (Wright and Anderson, 1963, Table 3, p. 35).

Comparative analysis of the non-ceramic traits from the Laurel components in Northern Ontario is limited to the scrapers. Projectile points, as with the majority of the other stone, bone, copper, and shell traits, are too scarce from components other than the Heron Bay site to allow effective comparisons. Two exceptions are the high frequencies of end-notched netsinkers and abraders at the Pays Plat and Heron Bay sites. The available ceramic evidence suggests that the Pays Plat site and the Heron Bay site were occupied at approximately the same time, and it may be possible that these two traits are predominant in the earlier portion of the Laurel Tradition. Certain general observations can be made with regard to a number of the other traits. Projectile points from the Heron Bay, Little Pic River, Pays Plat, and Rosspoint sites are quite similar, and some specimens illustrated for the Swan Lake site (Kenyon, 1961, Plate VI, figs. 2, 5) appear to correspond to the small convex blade edge, convex base, and side-notched points characteristic of the preceding sites. At the Killala Lake and the Pelican Falls sites the projectile points are somewhat different although the small sample from the former site

and the danger of cultural mixture at the latter site limit the significance of the differences. Biface blades are generally small and ovate acuminate or triangular in shape. Linear flakes are similar in form and dimensions, and no significant trends can be seen in time. The fact that heavy scraper tools were present at both the Heron Bay and Killala Lake sites suggests that they possess a substantial time depth. The linear hammerstones that were present at the Heron Bay and Pays Plat sites were absent from the Killala Lake site. This suggests that they may represent an early variety. Copper artifacts occurred predominantly at the Heron Bay site although beads, a bar, an awl, a barb, a projectile point, flakes, and nuggets were found on other components. The condition of bone preservation at the majority of the sites prohibited comparisons.

As can be seen from the preceding, the number of specimens of any single trait, at sites other than the Heron Bay site, was too small to allow effective comparisons. The single exception to this situation is in the scrapers where three sites, Heron Bay, Pays Plat, and Killala Lake, possessed a sufficient number to draw conclusions from the comparisons. It is restated that the Heron Bay and Pays Plat sites are regarded as being early in the Laurel sequence whereas the Killala Lake site is thought to be later. The frequencies of the scraper classes and subclasses for these three sites are given on Table 35.

Table 35—SCRAPER SERIATION FOR THREE LAUREL TRADITION SITES

Class	Subclass	Pays Plat (39)		Heron Bay (598)		Killala Lake (31)	
		f	%	f	%	f	%
End scraper	Simple	11	28.2	181	30.3	14	45.2
	Oblique	—	—	14	2.3	3	9.7
	Side-notched	—	—	1	.2	—	—
	Fragments	—	—	21	3.5	1	3.2
		11	28.2	217	36.3	18	58.1
Side scraper	Irregular retouch	10	25.6	93	15.6	1	3.2
	Continuous retouch	6	15.4	74	12.4	2	6.5
	Irregular and continuous retouch	2	5.1	16	2.7	1	3.2
	Triangular	1	2.6	15	2.5	1	3.2
	Concave	—	—	4	.7	—	—
	Side-notched concave	—	—	4	.7	—	—
	Crooked	1	2.6	2	.3	—	—
	Fragments	1	2.6	10	1.7	—	—
		21	53.9	218	36.6	5	16.1
Random flake scraper		7	17.9	163	27.3	8	25.8
TOTALS		39	100.0	598	100.2	31	100.0

The coefficients of similarity with reference to scrapers for these three sites are as follows: Heron Bay/Pays Plat – 162; Heron Bay/Killala Lake – 153; and Pays Plat/Killala Lake – 123. In terms of these figures the Pays Plat site is less similar to the Killala Lake site than the Heron Bay site is, although Pays Plat and Heron Bay bear the greatest similarity. As such, the scraper seriation suggests that the Pays Plat site is somewhat earlier than the Heron Bay site. On the basis of this assumption a number of interesting general and specific trends can be seen within the three sites. End scrapers increase in frequency going from 28 per cent at Pays Plat to 36 per cent at Heron Bay to 58 per cent at Killala Lake. Side scrapers decrease in frequency from 54 per cent at Pays Plat to 37 per cent at Heron Bay to 16 per cent at Killala Lake. The random flake scrapers increase from 18 per cent at Pays Plat to 27 per cent and 26 per cent at Heron Bay and Killala Lake respectively. At the subclass level a number of interesting trends can be seen although their significance is somewhat weakened by the sample size from the Pays Plat and Killala Lake sites. The simple end scraper increases steadily, and the oblique end scraper which is absent from the Pays Plat site increases from the Heron Bay site to the Killala Lake site. A steady decrease in the percentage of irregular retouch and continuous retouch side scraper subclasses occurs while the irregular and continuous retouch side scraper remains relatively constant as does the triangular subclass. Concave, side-notched concave, and crooked side scraper subclasses are absent from the Killala Lake site and may represent early varieties.

The metrical data on the scrapers also show some interesting trends. With reference to the simple end scrapers (Tables 9, 19, and 22), the maximum length and width (maximum width at end scraping edge) are approximately equal at the Pays Plat and Heron Bay sites, but at the Killala Lake site the length is significantly greater than the width. The height of the end scraping face is also less than on the Pays Plat and Heron Bay specimens. However, the oblique end scrapers from the Heron Bay and Killala Lake sites are very similar and do not support the trends seen in the simple end scrapers. There are also considerable differences between the number of scraping faces present on the simple end scrapers of the Pays Plat and Heron Bay sites as opposed to those of the Killala Lake site. This same situation is present with reference to the oblique end scrapers at the Heron Bay and Killala Lake sites. The number of side scrapers from the Killala Lake site is too small to allow effective comparisons.

The preceding comparisons of Laurel components in Northern Ontario have indicated a chronology which is largely based on ceramic and scraper attributes of form and measurement. Since these two categories of artifacts were most frequently encountered on the sites it is not too surprising that they represented the most effective media within which to establish a chronology based on sequential change. Only six sites, however, possessed large enough samples of either or both artifact categories to allow specific comparisons. The comparisons suggest that the sequence of sites, running from early to late, is Pays Plat, Heron Bay, Pelican Falls, Long Sault, Killala Lake, and Hungry Hall. A great deal more comparative data is necessary, however, to place this sequence on a firm base, and it is presented here only as a rough approximation of the

site order. The major trends within the ceramics are the increase in bossing, the linear punctate and dentate stamp techniques, the absence of decoration, and the decrease in the pseudo scallop shell technique. These developments are also reflected by the metrical data, particularly with reference to the encircling line of punctates. End scrapers show a steady increase through time with a concomitant decrease of the side scrapers. Metrical data again adds support to these trends. Of interest also is the presence of netsinkers at only the two earliest sites. A number of other lithic and ceramic traits appear to possess temporal and/or spatial significance, but more data are needed before they can be accurately evaluated. In more general terms, the sites are usually small and probably represent the accumulation of an undetermined number of seasonal occupations. Features are rare, and the burial mounds are restricted to the immediate area of the Rainy River.¹ The faunal analysis from the Heron Bay site suggests an economy centred on beaver and moose. Although netsinkers were present at this site, the scarcity of fish remains raises the possibility that the notched stones served some function other than as net weights. Of great importance is the evidence that the Laurel Tradition represents the first ceramic complex in Northern Ontario. The sole evidence of Early Woodland was a single Vinette 1 sherd found in direct association with the Laurel remains at the Heron Bay site. Both the sequence at Rossport with its Archaic to Late Woodland components isolated on different strand-lines and the stratified sequence at the Eaka site where Laurel ceramics rest directly on top of the Archaic deposit emphasize the priority of Laurel ceramics in the area. Dating the Laurel Tradition in Northern Ontario has been a difficult matter. There is the radiocarbon date of approximately 500 B.C. for the Saugeen focus Donaldson site with its associated Laurel ceramics. A date of A.D. 320 is available from the Sand River site as well as an unacceptable date of A.D. 610 from the Heron Bay site. Since the two late Archaic components of Inverhuron (Kenyon, 1959) and Frank Bay (Ridley, 1954), on the eastern periphery of Northern Ontario, have radiocarbon dates of 942 ± 75 B.C. (S-60) and 970 ± 300 B.C. (M-363) respectively, the Laurel Tradition could not have entered the area prior to this time. It is my view that the Laurel Tradition may have begun its penetration of Southern Ontario as early as 700 B.C. On the assumption that the complex is of Asiatic origin, certain manifestations to the west would be considerably older. At the other end of the time scale it is inferred that the Laurel Tradition evolved into a number of regional Late Woodland developments. This process of differentiation out of a common base must have begun by A.D. 500. If it is assumed that Laurel remains, prior to this somewhat arbitrary date, are still recognizable as Laurel, then a time depth of over 1,000 years is attributable to the complex in Northern Ontario. It is anticipated that radiocarbon dating and, perhaps, elevated beach dating along the north shore of Lake Superior will add confirmation to the time depth inferred above.

Minnesota Laurel Components

Information on the Laurel Tradition in northern Minnesota comes from the excavation of three burial mounds (Wilford, 1952; 1955).

¹Professor K. C. A. Dawson, Director of Northern Area Studies, Lakehead University, Port Arthur, Ontario, has recently located Laurel burial mounds in the Lakehead area (pers. comm.).

The Pike Bay mound is located on the south side of Lake Vermilion; it had an approximate diameter of sixty-five feet, and although badly disturbed it still stood six feet in height. Because of acid soil conditions no skeletal remains were recovered. The mound was built up from village floor scrapings and was quite rich in artifactual remains. Also, a small quantity of the ceramics recovered from the mound are attributable to the Late Woodland Blackduck focus.

Of the 4,705 body sherds 98.7 per cent are plain; the remainder are cord wrapped paddle impressed. It is stated that "The pottery is strongly characterized by the lack of cord impressions either as surface treatment or decoration. The few occurrences noted are believed to represent intrusive sherds" (Wilford, 1955, p. 134). The rim sherd description is incomplete, but sufficient information is available to attempt a comparison with the Northern Ontario components. It is stated that 23.1 per cent of the rims were decorated with "the meander variant" (pseudo scallop shell), 22.8 per cent with simple push-and-pull (linear punctate), 16.6 per cent with complex push-and-pull (dragged stamp), 5.5 per cent with true dentate and 4.0 per cent with triangular dentate, and 2.4 per cent with incised. The preceding accounts for 74.4 per cent of the rim sherds from the site, and when compared with Table 33 it can be seen that the Pike Bay site fits best between the Long Sault and Hungry Hall sites. It is further mentioned that 5.8 per cent of the Pike Bay site rim sherds were bossed and that 4.2 per cent possessed punctates. If these attributes are by themselves on plain rims then they would be classified under the category of 'plain' in the present report. This would result in 10.0 per cent plain rims and add support to the position of the Pike Bay site between the Long Sault and Hungry Hall sites.

Non-ceramic traits recovered from the mound consist of scrapers, projectile points, copper items, and a few bone artifacts. The 117 chipped stone tools include 24 scrapers of jasper, one obsidian scraper, six stemmed points, two triangular points, and one side-notched point. Copper artifacts were represented by two sheet fragments and one tubular bead. One oblique ground beaver incisor and two unilaterally barbed harpoons were also found. The harpoons would appear to pertain to the Blackduck focus.

The Smith Mound 4 is located on the Rainy River at Laurel. The mound was 50 feet in diameter and stood 4 feet 10 inches in height. One hundred and three of the 112 burials were 'congested' in four tiers into an area 14 feet square near the mound centre. Burial techniques consisted of 72 bundle, 28 scattered, 5 primary, 7 indeterminate (probably disturbed primary), one cremation, and a primary dog burial. Some of the primary burials were definitely attributed to the Late Woodland Blackduck focus. There was abundant evidence of mutilation in the form of occipital removal (several incidences) and of long bone breakage (72 of the 77 adult femora). Of the 1,067 sherds recovered from the mound fill a small percentage was assignable to the Blackduck focus. With reference to the rim sherds it is mentioned that the dentate technique (under Wilford's classification the pseudo scallop shell technique is included in the dentate technique) was more common than the "push-and-pull" band (dragged stamp and linear punctate techniques of this report). It is further stated (Wilford, 1952, p. 8) that "The wavy-line stamp

is second in importance in both series" suggesting that dentate stamp dominates pseudo scallop shell and that linear punctate dominates dragged stamp. If this is so, it would indicate that the Smith Mound 4 site is late and that it may be most closely related to the Hungry Hall site.

Nine antler and bone "projectile points" with line hole, which are very similar to those described as harpoons for the Heron Bay site, were found. In addition, six obliquely ground beaver incisors and a bone arm band were recovered.

The McKinstry Mound 1 is located on the Rainy River at Pelland. It had a diameter of 83 feet and stood 8.5 feet in height. The writer has no information on the burials.

Of the 6,206 body sherds recovered from the mound fill, 99.84 per cent are plain. The rim sherds are characterized by a low frequency of stamping and a high frequency of push-and-pull. The low frequency of stamping, which includes the pseudo scallop shell technique, and the high frequency of push-and-pull, which includes linear punctate, would suggest that the site is late.

Bone items recovered from the mound fill consist of 29 socketed antler points with line hole and 25 obliquely ground beaver incisors. Copper objects were represented by a bracelet, awls of rolled sheet copper, tubular beads, fragments, and "short lengths of copper bent to form prongs." Of the 128 chipped stone objects, 42 end scrapers and 12 stemmed projectile points are mentioned.¹

Wilford (1955, p. 135) has stated that the closest relative to Laurel in Minnesota is the Malmo focus of the Mille Lacs area. He has further stated that the Malmo focus ceramics have "an intermediate position between Howard Lake and Laurel wares. . . ." Since the Howard Lake focus has been assigned to the Hopewellian Phase, it would appear that the Malmo focus ceramics are a blending of Laurel and Hopewell ceramic traditions. This would represent an identical situation to what appears to have taken place to the east where a fusion of Laurel and Hopewell ceramic attributes resulted in the Saugeen and Point Peninsula foci ceramic assemblages. The writer is certainly not qualified to discuss in detail the interactions of these two traditions (Laurel and Hopewell) in Minnesota, but it is significant to note that the events seen in Ontario and further to the east appear to be basically similar to those taking place in Minnesota. In both areas the relatively clear-cut Laurel and Hopewell manifestations are separated from one another by substantial zones characterized by a blending of the two traditions. This phenomenon will be discussed in some detail in the section concerned with the Saugeen and Point Peninsula foci.

Manitoba and Saskatchewan Laurel Components

Dr. Richard S. MacNeish (1958) has reported on Laurel components at the Lockport, Cemetery Point, and Anderson sites of southeast Manitoba. In addition, Dr. William J. Mayer-Oakes of the University of Manitoba has kindly provided the writer with certain data from the Tailrace Bay site at

¹The present manuscript was submitted for publication prior to an examination of Mr. James B. Stoltman's Master of Arts thesis "A Proposed Method for Systematizing the Modal Analysis of Pottery and Its Application to the Laurel Focus," which study is an excellent presentation of the characteristics of Laurel ceramics in Minnesota.

Grand Rapids in central Manitoba. Information on Laurel components in Saskatchewan is of a more diffuse nature.

In his examination of the Laurel Tradition in southeast Manitoba, MacNeish established two foci: Anderson and Nutimik. The Anderson focus was estimated to date between 1,500 and 2,500 years ago, and it represented the first ceramic complex in the area. The Anderson focus ceramics consist of coconut-shaped vessels with vertical to slightly outflaring rim profiles, and they are generally smooth surfaced. The three major decorative techniques encountered are dentate stamp, linear punctate, and cord wrapped paddle impressions. In the later Nutimik focus, estimated to date between 1,000 and 1,500 years ago, four new techniques of decorating pottery have been added to the dentate stamp, linear punctate, and cord wrapped paddle techniques of the preceding Anderson focus. These techniques are a red ochre wash on a smooth surface, net impressing, incising, and dragged stamp. Punctating, which may or may not raise bosses, is mentioned for both foci but is not quantified nor qualified. The use of the cord wrapped paddle technique is much more common in the later focus, and much of it has been vertically rockered onto the vessel. A number of lithic and bone traits are also described for the two foci.

The number of actual rim sherds from different vessels is very low for all the components involved in the analysis of the Anderson and Nutimik foci. Indeed, the samples are too small (less than twenty specimens), in the writer's estimation, to allow the formulation of two separate foci or even to demonstrate a significant temporal sequence. Because of the limited quantity of comparable material the writer cannot, at this time, accept the proposed existence of two sequential and discrete foci of the Laurel Tradition in southeast Manitoba.

On the basis of the frequencies of dentate stamping, linear punctating, and cord impressing, as well as the virtual absence of the pseudo scallop shell technique, it would appear that the ceramics attributed to both the Anderson and Nutimik foci are late in the Laurel Tradition. Furthermore, the abundant use of cording, as a method of surface treatment and as a decorative technique, would suggest that the complex is possibly transitional from Middle Woodland to Late Woodland. Such a transition gains support from the incidence of boss-producing exterior punctates and the obliques or verticals above horizontals motif, although the samples are too small to be demonstrative. The information available, in the writer's view, adds support to Evan's hypothesis (pers. comm.) that the Late Woodland Blackduck focus evolved in situ from a Laurel base.

Projectile points are predominantly corner-notched (12) although side-notched (6) and stemmed (2) specimens are also present. End scrapers (20) are slightly less common than flake side scrapers (25). This last group includes the irregular retouch, continuous retouch, and irregular and continuous retouch subclasses of side scrapers in this report. Linear flakes are represented by three specimens. Biface blades are relatively common with sixteen specimens noted. A single linear hammerstone and a polished adze were found. Worked bone is limited to three obliquely ground beaver incisor tools, two awls, and an antler flaker.

At the Tailrace Bay site, near the north end of Lake Winnipeg, Dr. Mayer-

Oakes excavated a multiple component site in which the components were mixed because of the shallowness of the deposit and from ploughing. Over fifty per cent of the Laurel rim sherds were decorated with the pseudo scallop shell technique, although it is certainly possible that these sherds came from more than one Laurel component. The very high percentage of this decorative technique at the Tailrace Bay site stands in marked contrast to the two specimens encountered on the Laurel sites in southeast Manitoba. Since the rim sherd seriation for four Northern Ontario Laurel sites (Table 33) indicates that the pseudo scallop shell technique is dominant during the early portion of the tradition and that it decreases markedly with time, it would appear that the Tailrace Bay site is early in the sequence. The northern location and apparently early time position of this site in addition to its adequate samples for analysis suggest that the final report will represent an important contribution to the knowledge of the Laurel Tradition. Unfortunately, however, the extensive mixture of Archaic and Late Woodland remains with the Laurel material will pose limitations on both interpretations and comparisons.

In The Pas, to the northwest of Grand Rapids, a small amount of Laurel material was examined by the writer in 1963. The rims are plain with exterior bosses or pseudo scallop shell combined with dragged stamp and punctate segregated exterior bosses. Limited evidence of a Laurel occupation has also been discovered on the Grass River, one of the tributaries of the Nelson River (Walter Hlady, pers. comm.).

The only direct mention of a Laurel component in Saskatchewan comes from James A. Brown (1962, p. 120) who identified one of the components of the stratified Pelican Narrows site as belonging to the Anderson focus. As this component represents the most northern, as well as most western, expression of the Laurel Tradition, its analysis could reveal much pertinent information.

Although I do not believe that there is sufficient material from the Laurel Tradition in southeast Manitoba to establish two sequential foci, I do find myself in essential agreement with a number of the broader interpretations proposed by MacNeish regarding Laurel relationships to the east and to the north. It is agreed that "the southeastern Manitoba, northern Minnesota, and Northeastern Woodland ceramics are genetically connected on an early time-level" (MacNeish, 1958, p. 142), as will be seen in the subsequent examination of the eastern Middle Woodland complexes. Further, MacNeish envisions Asiatic pottery as having been grafted onto a Denbigh-like complex and having moved along the Arctic Coast and down the west side of Hudson Bay into the eastern Woodlands. The positive evidence for this hypothesis largely rests on the finding of "cord-marked, dentate-stamped, combed, and check-stamped pottery" (*ibid.*, p. 81) in association with a waning Arctic Small Tool Tradition (Buckland Hills phase) at the Engigstciak site (*idem*, 1959, p. 50-51) on the Yukon coastal plain. Perhaps a greater stimulant to the hypothesis is the negative evidence of ceramics in the interior Boreal Forest. Early Woodland pottery is absent from southern Manitoba, and, indeed, at a comparable time level the area was occupied by Archaic groups. Of course, MacNeish is assuming that the Early Woodland pottery of the Northeast is derived from Asia and that if it had moved across southern Manitoba it would have been encountered in the excavations. Since one hypothesis of this report is that Early

Woodland ceramics were derived from the south and not from Asia the absence of such ceramics does not pose a difficulty. Other evidence offered to support the premise that "pottery did not diffuse through the interior boreal forest and southeastern Manitoba when it moved into the Eastern Woodlands" (*idem*, 1958, p. 80) includes the absence of early ceramics from the boreal forests of the Northwest Territories, Yukon, and Alaska and the movement of ceramics into the Great Plains from the east rather than from the northwest. It is the writer's view that the extent of archaeological research along both the Arctic Coast and the interior Boreal Forest is too spotty to exclude either area as a possible path for pottery diffusion. Indeed, despite the evidence presented by MacNeish, the writer would favour an interior diffusion route. If ceramics had passed through complexes in northwestern North America which were not equipped to exploit the Plains and if the groups already occupying the grasslands to the north did not adopt the trait, then it would be possible for pottery to skirt the area and enter it later, under more favourable circumstances, from the east. In the concluding chapter these matters will be given further consideration.

Middle Woodland Complexes of the Northeast

Two Middle Woodland complexes to the east of the Laurel Tradition which can be examined in some detail are the Point Peninsula 2 focus and the Saugeen focus. Both these foci, as well as related complexes which extend to the coastal region of the Maritimes and the New England states, are regarded as the products of a fusion between the northwestern derived Laurel Tradition and the southern derived Hopewell Tradition. Evidence for the fusion is not restricted to ceramics, although this trait represents the most sensitive indicator of the interrelationships between the two traditions.

The Point Peninsula sequence of New York State (Ritchie, 1944; Ritchie and MacNeish, 1949) has been divided into four foci (Ritchie, 1951). Since the Point Peninsula 1 focus pertains to the Early Woodland with its Vinette 1 pottery, it is not considered in the present examination. It is the Point Peninsula 2 focus with its Vinette 2 ware consisting of "grit-tempered, dentate-stamped, rocker-marked, and cord-decorated pottery of conoidal based form" (*ibid.*, p. 134) that will be the major subject of inquiry. Both the Point Peninsula 3 and 4 foci are later developments of the Point Peninsula 2 focus and will be considered only briefly as regional expressions of the Middle Woodland period.

The Point Peninsula 2 focus is found in southeastern Southern Ontario, west-central and northern New York, and southern Quebec. In addition, a number of elements of the focus are found as far east as the coastal New England States and the Maritimes. In Ontario the complex appears to have been predominantly derived from the Laurel Tradition with some Hopewell traits having been grafted on. On the other hand, in New York State, where the Point Peninsula sequence was defined, the Hopewell influences appear to be predominant. Two decorative techniques are believed to act as good indicators of the interplay between the Laurel and Hopewell traditions. These are pseudo scallop shell, which is restricted largely to the Laurel Tradition, and rocker stamping, which is restricted largely to the

Hopewell Tradition. With reference to these two decorative techniques, the Point Peninsula 2 sites of southeastern Southern Ontario possess an abundance of pseudo scallop shell impressed sherds and a relative paucity of rocker stamped sherds. Corresponding sites in New York State, however, have a directly reversed occurrence of the two techniques. Also, the Early Woodland Vinette 1 pottery type, which survives into the Middle Woodland period, is absent or of low occurrence on the Ontario sites as opposed to its substantial representation on equivalent New York sites (Ritchie and MacNeish, 1949, p. 118, fig. 42). In fact, the closer the Point Peninsula 2 focus sites of southeastern Southern Ontario are to the Precambrian Shield the closer they resemble the Laurel sites of the Shield proper. And, conversely, the sites in the St. Lawrence Valley adjacent to New York State show an appreciable survival of the Vinette 1 pottery type as well as far greater evidence of Hopewell influence. The degrees of relationship of the Point Peninsula 2 focus sites in southeastern Southern Ontario to the Laurel and Hopewell traditions definitely appear to reflect their spatial location.

Archaeological survey and surface collections indicate that a large number of Point Peninsula 2 focus sites exist in southeastern Southern Ontario and southern Quebec. These sites, however, are separated from the recognized Laurel sites to the northwest by a number of components which are difficult to assign to either the Laurel Tradition or the Point Peninsula 2 focus because of the sparse amount of material recovered.

At the foot of the *Sheguiandah* site on Manitoulin Island, a small component is situated on an elevated beach approximately 150 feet back from the lake. The site has no relationship to the early occupations on top of the hill. Among the limited amount of material recovered by Mr. T. E. Lee (material and notes in National Museum of Canada) from this component was a rim sherd with exterior bosses and oblique rows of short pseudo scallop shell impressions which is definitely assignable to the Laurel Tradition. A few other plain and pseudo scallop shell impressed sherds were also recovered.

The *Killarney* site is located on Killarney Bay at the north end of Georgian Bay (Greenman, 1948) and has been assigned to the late Early Woodland period (Ritzenthaler and Quimby, 1962). The 'burial mound' from which the materials were recovered has been dated by the radiocarbon method at 80 ± 200 B.C. (M-428) (Crane and Griffin, 1959, p. 183). During a survey in the area in 1961 the writer examined the site and was of the conviction that the mound represented a natural sand knoll. The small quantity of ceramics from the site that are in the Museum of Anthropology, University of Michigan, and in the National Museum of Canada has been examined by the writer. Two ceramic traditions are present with one small series of sherds belonging to Laurel/Point Peninsula and the other series of sherds resembling the Havana Plain pottery type (Griffin, 1952, p. 104) of the Hopewell Tradition.

At the stratified *Frank Bay* site (Ridley, 1954) a Middle Woodland component (Point Peninsula stratum), which also contained Vinette 1 sherds, was found to rest directly on top of the late Archaic Mattawan stratum radiocarbon dated at 970 ± 300 B.C. (M-363). Some intrusion of later material appears to be represented in the illustrations in Figure 18, and specimens j, o, and r are regarded as Late Woodland rim sherds. The three "crudely chipped

oval pieces of slate" (Fig. 18, k) are very similar, if not identical, to specimens recovered from Late Woodland sites during my survey of the French River in 1961. The remaining material represents an interesting mixture of Laurel Tradition and Point Peninsula 2 focus characteristics, and although the majority of the rim sherds could well be found on a Point Peninsula 2 focus site to the southeast, the presence of exterior bosses, rows of short, oblique pseudo scallop shell impressions, and the relatively short distance the decoration extends below the lip, all emphasize a close connection with the Laurel Tradition. Other Laurel-like traits consist of side-notched, convex blade edged, and base edged projectile points, "numerous" end scrapers, and copper awls. Evidence of southern influence and the suggestion that the blending of the Laurel and Hopewell traditions was taking place at this component are apparent in the presence of Vinette 1 pottery and the combination of the pseudo scallop shell and rocker stamping techniques on the same vessels. The Frank Bay site component appears to represent one of the earliest evidences of the blending of the Laurel and Hopewell traditions.

The De Troyes Island site on Lake Abitibi (Ridley, 1956) produced sherds attributed to a single "Point Peninsula Complex Dentate type vessel," a side-notched, convex-based projectile point fragment, and the base of a "cache blade." As it is believed that the above pottery type can be equated with the dragged stamp technique, the small amount of material from the De Troyes Island site could very well belong in the Laurel Tradition.

A small quantity of material has been recovered by Mr. Clyde C. Kennedy from *the Hynes site* on the Ottawa River (Price and Kennedy, 1961, p. 16). The rim sherds are characterized by pseudo scallop shell impressions, rocker stamping, and exterior bosses and are regarded as evidence of the blending of the Laurel and Hopewell traditions.

The Goeland Lake site (Rogers and Bradley, 1953) is located on the Notaway River drainage which empties into the south end of James Bay. Two test pits were excavated on the site, designated 'site 114' by Rogers and Bradley. The single rim sherd (*ibid.*, Figure 55, specimen 18) is decorated with "cord markings, deeply impressed" and does not relate to the Laurel Tradition. Other specimens from the site consist of pseudo scallop shell impressed body sherds, a side-notched projectile point with convex blade edges and a convex base, and two end scrapers. With the exception of the illustrated rim sherd (Figure 55, specimen 18) the artifacts from site 114 would certainly not be out of place in the Laurel Tradition.

The Kempt Lake sites (Burger, 1953) are located on Kempt Lake in the headwaters of the St. Maurice River, Quebec. Camp-sites Nos. 1 and 7 are situated on Tobacco Bay and Obanaga Bay, respectively. Camp-site No. 1 produced pottery impressed with rocker stamp, pseudo scallop shell, dentate stamp, and linear punctate. A number of the side-notched projectile points from this site are very similar to the side-notched Laurel Tradition point. Camp-site No. 7 produced pottery described as "punctate decorated sherds" which, from the illustrations (Plate 2, figs. 14 and 16), appear to represent bossed and encircling punctate Laurel pottery.

The significance of the two Kempt Lake sites, other than the increased distribution of Middle Woodland, is the fact that one (Tobacco Bay) appears to

be a Point Peninsula 2 focus component whereas the other (Obanaga Bay) appears to be attributable to the Laurel Tradition.

With reference to the Point Peninsula 2 focus and its later developments, there are data available from seven sites in southeastern Southern Ontario and from two sites in southern Quebec. The sites in southeastern Southern Ontario are Kant, East Sugar Island, Serpent Mounds, Parker, Plum Point, Ault Park, and Malcolm, and the sites in southern Quebec are Vieux-Pont and Point Buisson.

The Kant site (Emerson, 1949; 1956) is located on the Bonnechere River drainage, one of the tributaries of the Ottawa River. Burials, as well as village debris, were recovered from the site.

Of the 596 sherds analysed, 30.5 per cent are plain and 25 per cent possess interior striation or channelling. This latter attribute is very characteristic of the Vinette 2 ware of the Point Peninsula sequence (Ritchie and MacNeish, 1949, p. 13), but it is absent from the Laurel Tradition ceramics. The analysis of the decorated sherds consists of Vinette Dentate (6.1), Vinette Complex Dentate (21.8), Point Peninsula Rocker-Stamped (16.5), Point Peninsula Plain (.8), St. Lawrence Pseudo Scallop Shell (18.6), Kant Rectangular Dentate (14.9), Wickham Incised (15.4), Iroquoian (3.2), and Miscellaneous (2.6). Kant Rectangular Dentate is one of the variations of the pseudo scallop shell technique, and the Vinette Complex Dentate type can be equated with the dragged stamp technique.

Projectile points from the site were predominantly side-notched, although corner-notched and stemmed specimens occurred. A number of the side-notched specimens are very similar to side-notched points in the Laurel Tradition. Biface blades were represented by two specimens, and a single drill was recovered. Five scrapers, predominantly of the end scraper variety, were found. Eleven polished stone adzes, a chopper, and a problematical object complete the list of stone tools. In addition, a single copper fish-hook was excavated, and there were reports of copper projectile points and a celt having been recovered from the surface of the site.

In conclusion, it may be noted that the paucity of scrapers and the abundance of polished stone adzes are non-Laurel Tradition characteristics. It should also be mentioned at this point that a substantial number of the traits found in the Point Peninsula 2 focus but absent from the Laurel Tradition may well have been derived from the indigenous Archaic complexes and need not pertain to the Hopewell Tradition.

The East Sugar Island site (Ritchie, 1949) is located in Rice Lake which is part of the Trent River system. Archaic, Middle Woodland, and Late Woodland components were present, and a considerable amount of mixture between the various components was evident. An attempt was made to seriate the decorated sherds from the Shell and Black strata in terms of decorative technique only (*ibid.*, p. 19, Fig. 5). Of the 198 sherds, 12, or 6 per cent, are classed as miscellaneous since they represent combinations of techniques. The examination was limited to the two lower strata to avoid mixture with the upper strata which possessed Late Woodland ceramics. The classification of the decorative techniques for the two strata consists of 34 per cent cord impressed, 24 per cent rocker stamped, 12 per cent pseudo scallop shell im-

pressed, 12 per cent linear punctate (including the closely related interrupted linear technique), 10 per cent incised, 4 per cent dentate stamped, 3 per cent dragged stamp, and 1 per cent punctated. The incidence of interior channelling was determined from the 226 undecorated body sherds recovered from the Shell and Black strata. It was found that 41 per cent of the sherds possess channelling and that the remaining sherds are plain.

It is difficult to assess the lithic and bone traits from the two strata since many of the specimens may pertain to the Archaic occupation. As such, the following observations are very tenuous: projectile points were predominantly side-notched; end scrapers were represented by two specimens; a polished stone adze and a stone axe were found; and a few bone awls and barbs and six antler flakers were recovered. A number of other single trait specimens were present.

The Serpent Mounds site (Johnston, 1958 *a* and *b*; 1960) is also located on Rice Lake, not too distant from the East Sugar Island site. Overlooking the lake is a sinuous burial mound 194 feet long, as well as a number of individual circular burial mounds. In addition to the Point Peninsula 2 focus ceramics recovered from the middens, a quantity of Late Woodland pottery occurred on the site. A radiocarbon date of A.D. 128 ± 200 (M-850), obtained from carbonized logs associated with cremation number 4, represents the sole radiocarbon estimate for the Point Peninsula 2 focus. The final report on this site, which is in the process of being written by Johnston, will make a substantial contribution to the understanding of the Middle Woodland period in the Northeast.

The Parker site (Leechman and de Laguna, 1949), like the preceding two sites, is located on the Trent River system of southeastern Southern Ontario. Archaic, Middle Woodland, and Late Woodland components are present in a highly mixed condition. The writer made a stratigraphic examination of the Middle Woodland ceramics from the site and, finding no appreciable variation by depth, he analysed the pottery as the product of a single component. Of the 27 rim sherds, 37 per cent are pseudo scallop shell impressed, 21 per cent are combined techniques, 22 per cent are dragged stamp, 7 per cent are linear punctate, and 4 per cent each are Vinette 1, plain, and linear stamp. The 367 body sherds examined consist of 26 per cent pseudo scallop shell impressed, 23 per cent dragged stamp, 14 per cent plain, 13 per cent channelled exterior, 11 per cent rocker stamped, 5 per cent linear punctate, 3 per cent dentate stamp, 2 per cent pseudo scallop shell and dragged stamp combined, and 1 per cent or less each of incised, cord malleated, Vinette 1, cord wrapped stick, and linear punctate and linear stamp combined. Interior channelling is present on 24 per cent of the body sherds. Rim profiles closely approximate those of the Laurel Tradition and are represented by 2 form 1; 10 form 5; 9 form 6; 1 form 7; and 4 non-Laurel varieties.

The Plum Point site is located on the Lower Rideau River south of Ottawa. A substantial amount of surface material was collected from this flooded station by the late W. J. Wintemberg, formerly of the National Museum of Canada. Other than a small quantity of Late Woodland material, all the pottery recovered pertains to the Middle Woodland period. Rim sherd decorative techniques for the 28 specimens consist of 32 per cent dragged stamp, 29 per cent pseudo scallop shell, 21 per cent dentate stamp, 4 per cent linear punctate,

4 per cent linear stamped, and 11 per cent combined techniques. Rim profiles are represented by 16 form 5; 4 form 6; 1 forms 12, 15, and 22; and 5 non-Laurel varieties. Only the decorated body sherds were analysed from this site, and the following percentages of techniques were found on the 158 sherds: 38 per cent dragged stamp, 26 per cent pseudo scallop shell, 11 per cent rocker stamped, 11 per cent linear punctate, 8 per cent dentate stamp, 3 per cent punctate, 3 per cent incised, and 1 per cent pseudo scallop shell and dragged stamp combined. On this same body sherd sample it was found that 20 per cent possess interior channelling. In addition, five sherds have a red ochre wash, and one sherd possesses a mortice and tenon coil break.

The Ault Park site (Emerson, 1956; 1958) was located beside the Long Sault Rapids of the St. Lawrence River and has subsequently been flooded by the St. Lawrence Seaway. In 1956 the writer analysed the material recovered from the site during the first season of excavation, and Dr. Emerson has kindly allowed the data obtained to be included in the present report. Since the site was excavated for a number of seasons, the following represents only a small portion of the recovered material. In addition, the writer has analysed all of the burial data uncovered at the site. Although a small quantity of Archaic and Iroquois material was encountered, the major component pertains to the Point Peninsula 2 focus.

The original ceramic analysis of the 314 rim sherds followed the pottery types established by Ritchie and MacNeish (1949). In order to be consistent with the rim sherd analysis followed in the present report the earlier analysis has been broken down in terms of decorative technique. Percentage occurrences are as follows: pseudo scallop shell impressed (39.0); cord impressed (13.0); dentate stamp (12.0); plain (11.0); incised (6.0); combined techniques (5.0); and rocker stamp (2.0). The remaining 12 per cent of the rim sherds consist of Vinette 1 (8.0), Geneseo Cord-Marked (3.0), and an undefined variety related to the two preceding (1.0). With reference to these last three pottery varieties, Vinette 1 and Geneseo Cord-Marked are characteristic of the New York Hopewell and are regarded as carry-overs from the Early Woodland period (Ritchie and MacNeish, 1949, p. 121). The Geneseo Cord-Marked type differs from Vinette 1 in that it lacks interior cording, whereas the undefined variety differs from the preceding two types in that it has a plain exterior and a corded interior. All three varieties appear to be closely related and their frequency at the Ault Park site is indicative of the site's early position in the Middle Woodland period. The 1,645 body sherd percentages are as follows: plain (30.0); cord impressed (16.0); dentate stamp (14.0); pseudo scallop shell impressed (13.0); rocker stamped (7.0); dragged stamp (6.0); cord impressed exterior/interior (5.0); cord wrapped stick impressed (4.0); incised (4.0); plain exterior/cord impressed interior (0.1); and fabric impressed (0.1). Unfortunately, the frequency of interior channelling was not noted in the original analysis. Also, the dragged stamp technique differs from the typical Laurel technique in that a two-pronged implement was used which leaves a series of impressions resembling a cleft-hoof. This same technique was noted at the Malcolm site, a short distance to the east (Dailey and Wright, 1956, p. 13) where it was classified as Malcolm Push-Pull. It must also be stated that, because of my limited knowledge of

Middle Woodland pottery decorative techniques at the time of the original Ault Park site analysis, there is a very real possibility that a number of the rim sherds classified as cord impressed actually are dragged stamp specimens.

Chipped stone artifacts from the site consist predominantly of projectile points, knives, and scrapers. Projectile point varieties have the following frequency occurrence: side-notched (30); stemmed (22); leaf-shaped (17); corner-notched (11); and triangular (4). Thirteen artifacts with bifacial flaking are interpreted as knives. Six specimens are side-notched and possess asymmetrical blades, while six other specimens consist simply of a flake with bifacial retouch along one edge. The remaining specimen is an ovate biface blade. The 123 scrapers consist of 49 irregular, 49 end scrapers (9 of these specimens are triangular blades with a scraper base, and one is side-notched), 12 spoke-shaves, 9 side scrapers, and 4 circular scrapers. Ground stone was represented by 2 adzes, 35 abraders, 6 graphite nodules, 'numerous' red ochre nodules, and a steatite platform pipe. Only three native copper items attributable to the Point Peninsula 2 focus component were found. These consist of two rectangular cross-section awls and a fragment.

In addition to the preceding artifacts, two cemeteries, isolated graves, numerous hearths, pits, and a possible house structure were uncovered at the site.

As the largest excavated Point Peninsula 2 focus site in Ontario, the Ault Park site should be extremely informative in the final analysis. The preceding general information from the material recovered during the first season of excavation anticipates a number of the contributions that will be made by the site.

The Malcolm site (Dailey and Wright, 1955) is located on the St. Lawrence River beside a small rapids three miles west of Cornwall and a short distance downstream from the Ault Park site. At the time of excavation the site was regarded as predominantly a late Point Peninsula (foci 3 to 4) component, although a small amount of Iroquois material and a large number of Archaic-like projectile points suggested the presence of earlier and later components. Although the possibility of an Archaic occupation was discarded (*ibid.*, p. 8) on the grounds that Archaic traits, other than some of the projectile points, were lacking, a subsequent radiocarbon date from one of the seven large pits (all devoid of artifacts) gave a reading of 1900 ± 90 B.C. (GSC-86), thus indicating that an Archaic component was, indeed, present at the site. As such, an unknown quantity of the lithic traits may belong to the earlier component.

Only the 108 rim sherds from the Malcolm site were analysed, and by altering the analysis based on Ritchie and MacNeish's pottery types (1949) to decorative techniques, the following percentages of techniques were obtained: 25 per cent cord impressed; 25 per cent dentate stamp; 16 per cent pseudo scallop shell; 13 per cent dragged stamp; 2 per cent rocker stamp; 2 per cent incised; 1 per cent plain; and 16 per cent miscellaneous. It should be mentioned that 10 per cent of the dragged stamp technique was executed with a two-pronged implement similar to that noted at the Ault Park site and that the majority of the miscellaneous rims represent combinations of techniques. Unfortunately the incidence of interior channelling was not quantified.

Common lithic traits, including possible Archaic specimens, consist of projectile points, knives, scrapers, ground celts, abraders, and hammerstones. The projectile points were represented by 18 stemmed, 14 side-notched, 4 corner-notched, and 3 triangular forms. A number of varieties of knives were present including a side-notched form and a triangular specimen with a scraper base. Of the 73 scrapers found, 53 are described as 'ovoid' and may be assigned to the end scraper and circular scraper classes. Twenty-seven polished celt fragments are noted, and other ground stone items consist of a perforated slate gorget, 2 triangular pendants or plummets, 3 steatite pipe fragments (one fragment recognizable as a platform pipe), a steatite bead, abraders, a pestle and metate, and pebble hammerstones. The only bone items recovered were a small notched splinter and a human incisor with grooving around the root for suspension. One fragment of native copper was also found.

The Vieux-Pont site (Levesque, 1962) is located on the Massawipi River near Lennoxville in southern Quebec. Pottery decorative techniques mentioned are rocker stamp, dentate stamp, pseudo scallop shell stamp, punctating, incising, and cord wrapped stick impressing. A number of the specimens illustrated as cord wrapped stick impressed (*bâton ficelé*) actually appear to be the dragged stamp technique (*ibid.*, p. 67, Planche D-1). Examination of the plates indicates that the rocker stamp technique is most prevalent at the site.

Levesque, referring to the Point Peninsula 2 focus in general, states that it "devrait normalement englober la majeure partie des objets trouvés dans le sud du Québec, si on s'appuie sur les seules informations que nous possédons actuellement" (Levesque, 1962, p. 73 - 74).

The Point Buisson site is located on the St. Lawrence River beside a major rapids near Beauharnois, P.Q., and was reported by Major James F. Pendergast during his survey of the area in 1963 for the National Museum of Canada. The site is extensive, rich, and probably stratified. Rim sherds collected from the surface are characterized by dentate stamping, a row of encircling exterior punctates which raise interior bosses, well-defined collars, and massiveness. Adequate samples for analysis from this site could throw a great deal of light on what the writer believes is the late end of the Middle Woodland sequence in the area.

Burial practices of the Point Peninsula 2 focus of southeast Southern Ontario are quite variable. The Kant site may be taken as an example of the northwestern Point Peninsula 2 focus and the Ault Park and Serpent Mounds sites as early and late examples of the southeastern Point Peninsula 2 focus. At the Kant site (Emerson, 1955) flexed and bundle burials were present. Red ochre occurred in one of the graves, and associated burial goods were lacking. At the Ault Park site (Emerson, 1956; 1958) cremations and extended burials were recognized, and the presence of flexed and bundle burials may have been obliterated by the strongly acid soil. Red ochre in powder and nodular form was a common feature of the graves, and a number of incidences of painting cremated remains with ochre paint prior to burial were noted. For example, cremated remains were found with red ochre adhering directly to the bone fragments; red ochre did not occur loose in the grave. Grave goods, while frequently present, were not in the abundance or quality of the preceding Early

Woodland period (Ritchie, 1955). The two cemeteries and the scattered graves from the site produced side-notched and corner-notched projectile points, cache blades, side-notched asymmetrical knives, scrapers, graphite nodules, and other miscellaneous items. Unique to the site were small, circular hearths filled with black soot which were found in both cemeteries. The hearths occurred at the same level as the graves; they are regarded as ceremonial features involved in the burial cult. The majority of the traits observed in the Ault Park burial complex are basic to the Early Woodland burial cult and are regarded as survivals from that period. In contrast, the burial features of the Serpent Mounds site (Johnston, 1960) reflect strong Hopewell influences which were absent from the Early Woodland derived complex seen at the Ault Park site. Flexed, bundle, and cremation burials were encountered in the Serpent Mound and an adjacent circular mound. Grave goods were rare, and the use of red ochre appears to have been discontinued. The most prevalent grave offerings were disc shell beads. Other items such as copper beads, a carved stone effigy, a double bitted adze, and what might be interpreted as the remains of medicine bundles were found.

Components of the Point Peninsula sequence in New York State will be considered, at a comparative level, after an examination of the Saugeen focus to the west in Southern Ontario.

Five components, all but one of which are situated in southwest Southern Ontario, have been assigned to the Saugeen focus, and these are the Donaldson, Inverhuron, Burley, Newman, and Short sites.

The Donaldson site (Wright and Anderson, 1963) is located on the Saugeen River a short distance from Lake Huron. Features encountered during the excavation were a cemetery containing six graves with twelve individuals in flexed and bundle positions; two rectangular house structures (23 feet by 17 feet, and 17 feet by 11 feet); three midden deposits; eleven pits, most of which represented tree-fall depressions filled with refuse; and a number of irregular fired floors in the burial area.

The percentage occurrence of rim sherd decorative techniques consists of the following: pseudo scallop shell (38.0); dentate stamp (39.0); rocker stamp (9.0); incised (5.0); plain (2.0); cord malleated (1.0); punctate, cord wrapped stick impressed, and thong impressed (all represented by less than 1.0 per cent); definite Laurel Tradition rims (2.0); Iroquois rims (1.0); and Vinette 1 (less than 1.0 per cent). The body sherd classification will be considered towards the end of the chapter. It was found that 7.0 per cent of the body sherds possess interior channelling.

Lithic traits consist of the following: projectile points (side-notched [6], corner-notched [5], trianguloid [3], and stemmed [3]); scrapers (random [29], end [46], corner-notched end [2], and hump-backed end [2]); bi-face blades (8); linear flakes or flake-blades (2); choppers (10); scraping planes (3); knife scraper spawls (7); celts (14); hammerstones (31); anvil stones (8); abraders (10); manos (2); metate (1); gorgets (6); netsinker (1); birdstone (1); and other miscellaneous items.

Native copper artifacts were represented by an axe, a punch, an awl, six tubular beads, and a short rod.

Bone items were limited to eight rodent incisor tools two of which

were obliquely ground, three awls, an antler socket harpoon head with line hole, and a few miscellaneous objects.

With the exception of a few Iroquois sherds the Donaldson site appears to represent a single component. The actual Laurel Tradition specimens (rim and body sherds and antler harpoon head) were in direct association with the Saugeen focus refuse. A number of the traits present are inferred to have been derived from the indigenous Inverhuron Archaic (Kenyon, 1959). Such traits would be the superabundance of firestone, projectile point varieties, celts, and knife scraper spawls. Radiocarbon dates for the Donaldson site and the nearby Inverhuron site (Archaic component) of 530 ± 60 B.C. (S-119) and 942 ± 75 B.C. (S-60), respectively, indicate that the two assemblages are not too distant from one another in time.

The Inverhuron site (Kenyon, 1959; Lee, 1960) is located on the shore of Lake Huron a short distance to the south of the Donaldson site.

Only 37 analysable rim sherds were available, and 63.1 per cent of these are decorated with the crude dentate stamp characteristic of Saugeen focus ceramics. The 469 body sherds consist of dentate stamp (65.0%); incised (8.0%); rocker stamp (6.0%); cord wrapped stick, push-pull, and plain (less than 1.0%); and miscellaneous (20.0%). Interior treatment of 324 body sherds is 35.0 per cent dentate stamp, 32.0 per cent channelling, and the remainder plain (Kenyon, 1959, p. 16-20). Lee (1960) obtained somewhat different results from his ceramic sample. In accordance with Ritchie and MacNeish (1949) he identified the following types: Vinette Dentate, Vinette Complex Dentate, Point Peninsula Rocker-Stamped, Point Peninsula Plain, and Point Peninsula Corded. Decorative techniques for 197 sherds are represented by incising (44.0%), dentate stamp (37.0%), rocker stamp (15.0%), and punctate (4.0%). Of the 433 body sherds 45.0 per cent are decorated, 47.0 per cent are plain, 4.0 per cent are thong impressed, 3.0 per cent are cord impressed, and a single specimen is impressed with a grooved paddle. In addition, mention of the Vinette Complex Dentate type suggests the presence of the dragged stamp technique, and the pseudo scallop shell technique is illustrated (Lee, 1960, p. 60, Plate III, figs. 17-19).

The non-ceramic traits from the Inverhuron site (Kenyon, 1959) consist of projectile points (side-notched [2], triangular [1]), scrapers (end [9], side [1]), hammerstones (2), a copper fish-hook, bone awls (6), and an obliquely ground beaver incisor tool.

Since an Iroquois component occurs in front of the Saugeen focus component and an Archaic component occurs behind, there is a possibility of some cultural mixture. For example, the writer would regard the triangular projectile point (Plate VI, fig. 5) as being assignable to the Late Woodland component. Isostatic rebound is probably responsible for the isolation of the Late Woodland, Middle Woodland, and Archaic components at different elevated beach lines. The Saugeen focus component occurs approximately 20 feet above the lake level.

The Burley site (Jury and Jury, 1952) is located on the Ausable River near its embouchure into Lake Huron. Three strata were present at the site, and it is the earliest occupation, with its Saugeen focus material, that will be considered.

A small sample of 56 sherds with crude dentate stamp on the exterior and dentate stamp or channelling on the interior was recovered from the stratum. Regarding the pottery, Dr. James B. Griffin states "Chronologically it would appear to be probably a very early Hopewell period" (*ibid.*, p. 70). Non-ceramic traits found in the stratum were netsinkers (6), abraders (2), and an iron pyrite nodule.

A radiocarbon date from this stratum of 677 ± 220 B.C. (C-192) is in relative agreement with the Donaldson site date and emphasizes the early temporal position of the Saugeen focus. The elevation of the component above lake level ranged between 12 and 14 feet.

The Newman site is located near the mouth of the Grand River where it empties into Lake Erie. It was excavated by W. J. Wintemberg in 1939. A relatively unbroken occupation extends from Archaic to Late Woodland, and one of the major components is assignable to the Saugeen focus on the basis of the ceramics. Since the complex stratigraphy at the site has yet to be interpreted, the ceramics have not been analysed, and the site is included in the present report to indicate the distribution of the Saugeen focus.

The Short site (Donaldson, 1962) is located near the mouth of a small creek which flows through the town of Bowmanville and empties into Lake Ontario. Both Iroquois and Middle Woodland material are present as well as some late historic items. The Middle Woodland component is only tentatively assigned to the Saugeen focus on the basis of certain ceramic and lithic traits. Pottery decorative techniques consist of dentate stamp, rocker stamp, incising, punctating, cord impressing, and possibly dragged stamp. Apparently twelve vessels are involved in the sample. One rim (Plate II, fig. c) possesses the hollow bone or reed punctations found on Saugeen focus ceramics, but absent, to the writer's knowledge, on Point Peninsula ceramics. Netsinkers, hammerstones, projectile points, scrapers, choppers, drills, and knives are thought to belong to the Middle Woodland component. The projectile points consist of side-notched, corner-notched, stemmed, and triangular varieties, and one side-notched end scraper is illustrated.

Of the preceding fourteen Point Peninsula and Saugeen foci components in Southern Ontario and Quebec, five can be compared to both Laurel components in Northern Ontario and Point Peninsula components in New York State with reference to the frequency of rim sherd decorative techniques. The sites used in the comparisons are four Laurel components (Heron Bay, Pelican Falls, Long Sault, and Hungry Hall), four Ontario Point Peninsula components (Ault Park, Parker, Plum Point, and Malcolm), one Saugeen focus component (Donaldson), and four New York Point Peninsula components (Wickham, Vinette [upper and middle levels], and Jack's Reef). Although Table 36 undoubtedly possesses a number of weaknesses (low samples from certain components, the Malcolm and Ault Park sites where certain decorative techniques may not have been recognized by the writer in his early attempts at classification, the likelihood of a substantial time depth being involved in some of the components, and certain combined techniques reported as a single technique), it is felt that the table reflects the rim sherd decorative technique characteristics of Middle Woodland period components extending across Ontario and into New York State. In each Middle Woodland category on the table the com-

Table 36 — RIM SHERD SERIATION FOR THIRTEEN MIDDLE WOODLAND COMPONENTS

Site	Pseudo scallop shell	Dragged stamp	Dentate stamp	Combined techniques	Plain	Incised	Linear punctate	Rocker stamp	Cord impressed	Linear stamp	Punctate	Early Woodland varieties	Miscellaneous	Middle Woodland category
	Techniques													
Hungry Hall	11.0 (4)	22.0 (8)	30.0 (11)	—	16.0 (6)	3.0 (1)	16.0 (6)	—	—	3.0 (1)	—	—	—	—
Long Sault	37.0 (10)	15.0 (4)	4.0 (1)	7.0 (2)	26.0 (7)	4.0 (1)	7.0 (2)	—	—	—	—	—	—	—
Pelican Falls	51.0 (23)	22.0 (10)	—	11.0 (5)	7.0 (3)	2.0 (1)	4.0 (2)	—	—	—	—	—	2.0 (1)	2.0 (3)
Heron Bay	47.0 (58)	24.0 (29)	4.0 (5)	15.0 (19)	—	—	6.0 (7)	—	—	—	2.0 (2)	—	—	—
Malcolm	16.0 (17)	13.0 (14)	25.0 (28)	8.0 (8)	1.0 (1)	2.0 (2)	—	2.0 (2)	25.0 (27)	P (?)	—	—	8.0 (9)	—
Pfum Point	29.0 (8)	32.0 (9)	21.0 (6)	11.0 (3)	—	—	4.0 (1)	—	—	4.0 (1)	—	—	—	—
Parker	37.0 (10)	22.0 (6)	—	21.0 (6)	4.0 (1)	—	7.0 (2)	—	—	4.0 (1)	—	4.0 (1)	—	—
Ault Park	39.0 (126)	—	12.0 (37)	—	11.0 (36)	6.0 (20)	—	2.0 (6)	13.0 (39)	—	—	12.0 (36)	5.0 (14)	—
Donaldson	38.0 (173)	2.0 (7)	37.0 (169)	—	4.0 (17)	5.0 (23)	P (2)	9.0 (41)	1.0 (4)	—	3.0 (12)	P (1)	1.0 (6)	—
Jack's Reef	—	3.0 (6)	17.0 (39)	—	3.0 (6)	—	—	48.0 (115)	27.0 (67)	—	—	—	3.0 (8)	—
Vinette (upper)	1.0 (8)	11.0 (79)	18.0 (133)	—	2.0 (15)	1.0 (7)	—	45.0 (328)	10.0 (72)	—	—	11.0 (84)	1.0 (6)	—
Wickham	3.0 (10)	11.0 (37)	18.0 (58)	—	2.0 (7)	12.0 (41)	—	20.0 (67)	10.0 (34)	—	—	18.0 (61)	6.0 (23)	—
Vinette (middle)	1.0 (2)	5.0 (16)	11.0 (39)	—	1.0 (3)	1.0 (2)	—	12.0 (42)	4.0 (14)	—	—	66.0 (234)	—	—

ponents regarded as the earliest and the latest are located at the bottom and the top respectively. For example, in the Laurel Tradition the Heron Bay site is the earliest and the Hungry Hall site is latest with the remaining two sites in chronological order.

In order to evaluate the spatial and temporal significance of the various decorative techniques they are examined individually.

Pseudo Scallop Shell

This technique is common not only to the Laurel Tradition sites but also to the Point Peninsula and Saugeen foci sites of Southern Ontario. In marked contrast, the technique is poorly represented on the Point Peninsula foci sites of New York. Sequential trends in both the Laurel Tradition and the Point Peninsula sequence of Southern Ontario indicate that the technique is predominantly early and decreases with time. This interpretation is also upheld by the high frequency of the technique on the Saugeen focus Donaldson site with its radiocarbon estimate of approximately 500 B.C. On the basis of present evidence it would appear that the pseudo scallop shell technique not only is a good temporal indicator but also is largely confined to the Middle Woodland complexes in Canada.

Dragged Stamp

The dragged stamp technique is equated with the Vinette Complex Dentate pottery type (Ritchie and MacNeish, 1949, p. 102) as well as with the two-pronged variety of dragged stamp called Malcolm Push-Pull (Dailey and Wright, 1955, p. 13). This latter variety is found on Point Peninsula components in southeastern Southern Ontario in association with the more characteristic dragged stamp technique noted in the Laurel Tradition and on the Vinette Complex Dentate pottery type. In the Laurel Tradition the technique has a consistent and constant representation. On the Ontario Point Peninsula sites the technique is absent from the earliest site and well represented at the remaining sites with a decrease evident at the latest site. The absence of the technique from the Ault Park site is questionable as it may not have been recognized at the time of analysis. All the dragged stamp rims (7) from the Saugeen focus Donaldson site are actually Laurel Tradition specimens found in direct association with the Saugeen focus material. The representation of the technique on the four New York Point Peninsula components indicates an increase and then a decrease, through time. Spatially, the technique is well represented on the Middle Woodland sites of Ontario and New York. Temporally, dragged stamp appears to follow the pseudo scallop shell in its penetration to the east. This is suggested by the virtual absence of the technique from the early Saugeen focus Donaldson site.

Dentate Stamp

Dentate stamping is poorly represented in the Laurel Tradition until the latest site where it is the dominant technique. It would, therefore, appear that the technique is an excellent marker for late Laurel components. On the Point Peninsula sites of Ontario the technique shows a steady increase broken by

its absence from the Parker site. At the Donaldson site it is the second most common rim decorative technique. Well represented on the four Point Peninsula components in New York, the technique shows a slight increase from the earliest component and is then constant. The lateness of the technique in the Laurel Tradition and its high frequency on the early Donaldson site suggest to the writer that the dentate technique of the Saugeen and Point Peninsula foci sites is more likely derived from the Hopewell Tradition than from the Laurel Tradition.

For the Saugeen and Point Peninsula foci the dentate stamp is large and frequently square with clearly spaced individual tooth impressions, whereas in the Laurel Tradition the dentate stamp is small and rectilinear with interconnecting tooth impressions, and is often difficult to segregate from the pseudo scallop shell technique; these differences in the nature of the dentate stamp reinforce the above suggestion.

In general, the technique is well represented on all of the Middle Woodland complexes except for the larger portion of the Laurel Tradition. The technique also shows a slight increase in popularity through time.

Combined Techniques

The combined techniques for the Laurel Tradition sites and the Point Peninsula components in Ontario generally consist of combinations of pseudo scallop shell, dragged stamp, and linear stamp, and the absence of such combinations from the Ault Park, Donaldson, and New York Point Peninsula sites appears to be the result caused by the lumping of more than one technique under a type characterized by a single technique (Wright and Anderson, 1963, p. 61, Plate XI, fig. 14; and Ritchie and MacNeish, 1949, p. 101, Figure 37, g).

Plain

For comparative purposes the absence of decorative techniques is regarded as a technique. It should be stressed that, while the majority of the plain rims in the Laurel Tradition actually possess an encircling row of exterior punctates and/or bosses, such a feature is absent from the Point Peninsula and Saugeen foci ceramics. Plain rims show an increase in the Laurel Tradition and a decrease in the Point Peninsula sequence in Ontario. They also represent a minority variety in the Saugeen focus and the Point Peninsula foci of New York. The high frequency of undecorated rims at the Ault Park site, early in the Ontario Point Peninsula sequence, may reflect a survival of Early Woodland plain pottery. In the analysis of the single component Early Woodland site of Batiscau (Levesque, Osborne, and Wright, 1964) a number of plain rims were found in direct association with Vinette 1 pottery. This situation, however, is not supported by the low incidence of plain pottery in the middle levels of the Vinette site.

Incised

Incising is a minority technique with an erratic distribution in all of the Laurel Tradition, Point Peninsula, and Saugeen foci components, with the single exception of the Wickham site.

Linear Punctate

Linear punctate shows an increase in popularity in the Laurel Tradition. The technique, however, is poorly represented in the Ontario Point Peninsula and Saugeen foci components and is absent from the New York Point Peninsula components.

Rocker Stamp

The decorating of rim sherds by rocker stamping is absent from the Laurel Tradition and is poorly represented at the Ontario Point Peninsula sites. An appreciable frequency of the technique is present at the Saugeen focus Donaldson site, and the technique is dominant on the New York Point Peninsula components. On the latter components rocker stamping shows a steady increase with time. This technique is regarded as one of the evidences of influence from the Hopewell Tradition to the south, and its position in the New York Middle Woodland period is roughly equivalent to the position of the pseudo scallop shell technique in the Ontario Middle Woodland.

Cord Impressed

This category involves a number of decorative techniques characterized by cording. However, because of the nature of some of the data, it is not possible to effectively segregate the various techniques. It is safe to say that the majority of the specimens pertain to the cord-wrapped stick and cord-wrapped paddle edge techniques. Cording is absent from the Laurel Tradition in Ontario; it is erratically distributed in the Ontario Point Peninsula sequence being well represented at the earliest and latest sites and absent from the intermediate sites. At the Donaldson site the technique is barely represented. The New York Point Peninsula components, however, possess relatively high frequencies of the technique at all but the earliest site, and the development through time indicates a steady increase. It is inferred that the use of cording in the Middle Woodland period of Southern Ontario and New York is both a survival from the preceding Early Woodland period and an introduction from the Hopewell Tradition.

Linear Stamp

This technique is poorly represented both in the Laurel Tradition and on the Ontario Point Peninsula sites and would appear to be relatively insignificant.

Punctate

Punctating refers to the decorating of vessels with a series of punctates, usually organized into horizontal rows, and has no specific relationship to the encircling row of punctates so common on Laurel ceramics. The technique is weakly represented at the Heron Bay and Donaldson sites.

Early Woodland Varieties

This category refers to the Vinette 1 pottery type, except at the Ault Park site where the Genesee Cord-Marked pottery type and another undefined but

related variety were also found. As this pottery is an Early Woodland survival, it is indicative of the early temporal position of the Middle Woodland sites on which it is found. Early Woodland rims were absent from the Laurel Tradition although one body sherd was found. The Ault Park site is the only Ontario Point Peninsula component which produced an appreciable frequency of Early Woodland pottery. At the Donaldson site a single Vinette 1 rim sherd was found. In the New York Point Peninsula components the Vinette 1 pottery is well represented, but it shows a steady decrease in frequency and is absent from the late Jack's Reef site. Present information indicates that the Early Woodland period is quite peripheral to Ontario, and such a situation is reflected in the absence or scarcity of Early Woodland pottery from all the Ontario Middle Woodland sites excepting the Ault Park site. Since this latter site is situated not too distant from Early Woodland components in

Table 37 — BODY SHERD SERIATION FOR A LAUREL TRADITION, A POINT PENINSULA 2 FOCUS, AND A SAUGEEN FOCUS COMPONENT

Category	Heron Bay (Laurel Tradition)				Parker (Point Peninsula 2 focus)				Donaldson (Saugeen focus)			
	f	%	Thickness (mm)		f	%	Thickness (mm)		f	%	Thickness (mm)	
			Range	Mean			Range	Mean			Range	Mean
Plain	1,100	51.0	4-13	7.2	53	14.0	5-10	8.1	373	10.0	5-16	9.3
Pseudo scallop shell	378	18.0	4-12	7.4	97	26.0	6-12	8.2	825	23.0	4-15	9.8
Dragged stamp	302	14.0	5-13	7.6	83	23.0	5-11	7.8	5	P	7-10	8.2
Linear punctate	177	8.0	4-12	7.5	19	5.0	6-10	8.1	—	—	—	—
Dentate stamp	65	3.0	5-11	7.0	10	3.0	6-11	7.8	861	24.0	5-16	9.3
Combined techniques	36	2.0	4-11	7.2	9	2.0	7-9	7.7	195	5.0	6-14	9.6
Incised	21	1.0	6-9	7.5	4	1.0	7-9	8.0	167	5.0	6-13	9.5
Punctated	20	1.0	6-9	7.1	—	—	—	—	45	1.0	5-12	9.6
Channelled exterior	16	1.0	5-10	7.4	46	13.0	5-10	7.9	54	2.0	6-13	9.2
Rocker stamp	5	P	5-8	7.2	39	11.0	6-11	8.0	891	24.0	5-14	9.3
Saugeen focus	5	P	8-10	9.6	—	—	—	—	—	—	—	—
Cord malleated	1	P	—	6.0	3	1.0	8-10	9.3	50	1.0	6-13	9.5
Vinette 1	1	P	—	8.0	2	1.0	—	11.0	10	P	8-13	10.0
Basal sherds	15	1.0	11-23	13.0	—	—	—	—	105	3.0	13-20	16.6
Cord wrapped stick	—	—	—	—	2	1.0	8-9	8.5	—	—	—	—
Thong impressed	—	—	—	—	—	—	—	—	47	1.0	5-14	8.8
Laurel Tradition	—	—	—	—	—	—	—	—	19	1.0	6-9	6.8
Checkered	—	—	—	—	—	—	—	—	15	P	7-11	9.3
Fingernail impressed	—	—	—	—	—	—	—	—	5	P	8-10	9.0
Net impressed	—	—	—	—	—	—	—	—	1	P	—	10.0
Fabric impressed	—	—	—	—	—	—	—	—	1	P	—	10.0
TOTALS	2,142	100.0			367	101.0			3,669	100.0		

northern New York State (Ritchie, 1955), the presence of Early Woodland ceramics is more understandable. The available information indicates that Ontario was occupied by Middle Woodland complexes (Laurel Tradition, Hopewell Tradition, and blendings of the two traditions) before the effective penetration of Early Woodland ceramics into the area from the south and east.

Miscellaneous

A number of specimens were placed in this category since they represent decorative techniques or combinations of techniques limited to one component, non-Middle Woodland ceramics, and pottery types in which either of two decorative techniques is employed.

To enlarge upon the comparisons between the Laurel Tradition and the Point Peninsula and Saugeen foci, the body sherd seriations and sherd thickness data for one component of each complex are given on Table 37.

Besides reinforcing the relationship between the Laurel Tradition and the Point Peninsula and Saugeen foci, which was reflected in the rim sherd decorative techniques, the above table contributes additional information. The body sherd thickness data clearly indicate an increase in thickness from Laurel to Point Peninsula to Saugeen. Further, the significance of sherd thickness is enhanced by the discontinuities of Saugeen sherds at the Heron Bay site, Laurel sherds at the Donaldson site, and Early Woodland sherds (Vinette 1) at all three sites. The frequency of plain body sherds indicates that a much larger portion of the Laurel vessel was left undecorated than was the case with either the Point Peninsula or Saugeen vessels. Also, the frequency of the rocker stamped body sherds at the Parker and Donaldson sites as opposed to the frequency of rocker stamped rim sherds emphasizes the predominant use of this technique to decorate the body of the vessel. Absence of techniques was represented by the following: linear punctate at the Donaldson site; punctated at the Parker site; cord wrapped stick at the Heron Bay and Donaldson sites; and thong impressed, checkered, fingernail impressed, net impressed, and fabric impressed at the Heron Bay and Parker sites.

Three ceramic attributes of interest are the incidence of interior channelling, the presence of the mortice and tenon coil juncture, and a red ochre wash on the exterior of the vessel. Interior channelling appears to be totally lacking in the Laurel ceramic complex. The known frequency of the attribute for Point Peninsula and Saugeen foci components in Ontario is as follows: Donaldson (7.0%); Plum Point (20.0%); Parker (24.0%); Kant (25.0%); and East Sugar Island (41.0%). For the New York Point Peninsula components of Jack's Reef and Vinette, the percentage occurrence of interior channelling is given as 10.0 and 21.0 respectively. The temporal significance of channelling in the Point Peninsula sequence is still vague although the attribute appears to increase with time and then rapidly decrease. The mortice and tenon variety of coil juncture (Wright and Anderson, 1963, p. 31-32) is present as a minority attribute in the Laurel Tradition, Saugeen focus, and Point Peninsula 2 focus. A red ochre wash on the exterior rim and lip of the vessel, however, appears to be absent from the Saugeen focus, and its frequency on Point Peninsula and Laurel components is low but consistent.

The preceding ceramic comparisons between the Laurel Tradition and the

Point Peninsula and Saugeen foci indicate that a strong genetic relationship exists between the three ceramic complexes. It has been suggested by the writer that the Laurel Tradition was derived from Asia whereas the Point Peninsula and Saugeen foci are the products of a blending of Laurel Tradition and Hopewell Tradition traits plus survivals from the Early Woodland and Archaic periods. As such, the Laurel Tradition is regarded as a relatively cohesive complex bearing no specific relationship to the preceding Archaic complexes that it replaced. The Point Peninsula and Saugeen foci, on the other hand, retain evidence of an Early Woodland and/or Archaic ancestry in addition to the Laurel and Hopewell elements. Also, the relationship of Archaic or Early Woodland antecedents to eastern Middle Woodland complexes appears to correlate with geography. For example, in Southern Ontario the survivals appear to pertain predominantly to the Archaic whereas in New York State the perpetuation of Early Woodland traits is more characteristic. At a highly speculative level it may be suggested that the Laurel Tradition occupied Northern Ontario as an integrated complex which overrode the thin, indigenous Archaic complex. Further to the east, however, Southern Ontario was occupied by a substantial Archaic population while portions of New York State were occupied by Early Woodland peoples. In the face of the larger populations to the east it is inferred that the Laurel traits (particularly ceramics) entered the area by diffusion rather than as a cohesive complex carried by a related people. At the same time that Laurel ceramics were penetrating to the east by diffusion, a similar entrance of ceramic and other traits was taking place out of the south from the Hopewell Tradition. In this respect Archaic, Early Woodland, and Middle Woodland complexes are regarded as having been contemporaneous for a relatively short period. These developments resulted in the area comprising Southern Ontario, southern Quebec, New York, and through to the east coast having been turned into a melting pot of traits derived from a number of different sources. Since Southern Ontario was occupied by Archaic peoples at the time of Laurel penetration, its Middle Woodland complexes emphasize a blending of Laurel and the indigenous Archaic. And, since New York State was occupied by Early Woodland peoples and was geographically closer to the margins of the Hopewell Tradition, its Middle Woodland complexes emphasize the blending of Early Woodland and Hopewell traits. Although such a reconstruction is perhaps speculative to the point of fantasy and contains numerous gaps, it represents the only framework within which the writer can organize the available data in an effective manner. The statement of the interrelationships of various complexes in the Northeast, as inferred by the writer, is regarded as necessary before proceeding to the comparisons of non-ceramic traits of the Laurel Tradition and the Point Peninsula and Saugeen foci.

Early and Middle Woodland burial practices, including the construction of mounds, appear to be very indicative of the interrelationships between the various complexes. Burial mounds occur in the Laurel Tradition only in the Rainy River area of southwestern Northern Ontario and in adjacent northern Minnesota. Since burial mounds have a relatively unbroken distribution from Hopewell manifestations in the southern portion of the State to the Laurel mounds of the north (Wilford, 1955) and

since Middle Woodland mounds are absent to the north, west, and east of the Laurel mounds it would appear that the trait was adopted from the south out of the Hopewell Tradition. Indeed, as already has been mentioned (*ibid.*, p. 182), the Malmo focus, geographically intermediate between the Laurel and Hopewell traditions in Minnesota, possesses ceramics which appear to represent a blending of the ceramics to the north and to the south (*ibid.*, p. 135). As such, the situation in Minnesota appears to reflect closely the interplay of the two traditions noted farther to the east in the Point Peninsula and Saugeen foci. This same interplay is also reflected in the distribution of burial mounds and certain burial features to the east. Present evidence indicates that burial mounds are largely restricted to the north shores and tributaries of Lake Erie and Lake Ontario in Southern Ontario. The mounds also appear to be relatively late as suggested by their absence from the Saugeen focus and early Point Peninsula components, such as the Ault Park and Kant sites, and by the radiocarbon date of A.D. 128 from the Serpent Mounds site. Indeed, the burial practices of the Ault Park site appear to represent a survival from the preceding Early Woodland period. Both flexed and bundle burials were represented at the Kant and Donaldson sites, and although grave offerings were absent from the burials of the former site, the use of red ochre is reported. At the Donaldson site, grave goods were found in association with the infant burials but were absent from the adult graves. Some of the grave goods, such as ground and perforated bear canine pendants, as well as the association of grave offerings with infants rather than with adults, reflect Hopewell relationships (Neumann and Fowler, 1952, p. 220). As has been stated earlier, the burials at the Killarney site are regarded as having been situated in a natural sand knoll and not in an artificial mound. The presence of cremation as well as of bundle burials, red ochre, rough cache blades, copper beads, awls, axes, marine shell beads, a turkey-tail blade, corner-notched blades, a large ovate blade, and tubular stone pipes relates the complex to the Early Woodland period (Ritzenthaler and Quimby, 1962), although the radiocarbon date of 80 ± 200 B.C. (M-428) would appear to be too recent.

Stone platform pipes appear to represent a trait which entered the Point Peninsula foci from the Hopewell Tradition. Pipes of any form are absent from the Laurel Tradition, and though they have not been recovered from excavated Saugeen focus components, their presence in surface collections and graves in southwestern Southern Ontario (Ritchie, 1944, p. 181) suggests that they entered the area later in the Middle Woodland sequence. Indeed, while platform pipes are never frequent on Point Peninsula components they are more common on the later sites.

The polished stone gorget may have entered the Point Peninsula and Saugeen assemblages from either the Hopewell Tradition or Early Woodland complexes or, more likely, from both. On the other hand, the birdstone, a characteristic trait of the Early Woodland period, barely survives into the Saugeen focus and is apparently absent from the Point Peninsula foci.

Until more single component Middle Woodland sites are fully reported on, it will not be possible to make specific comments on the interrelationships of the majority of the lithic, bone, shell, and copper traits. However, a number

of general observations on certain traits may be made. Projectile points show a wide range of variation in the Point Peninsula and Saugeen foci, as opposed to the relatively consistent varieties in the Laurel Tradition. This situation may, in part, reflect the survival of Archaic and Early Woodland point varieties into the Middle Woodland period of Southern Ontario, southern Quebec, and New York. Indeed, the three point types described for the Middle Woodland period of New York (Ritchie, 1961) appear to be either absent or poorly represented in the contemporaneous complexes of Southern Ontario. Scrapers decrease in quantity and variety from the Laurel Tradition to the Point Peninsula and Saugeen foci, and the abundant side scrapers and end scrapers of the Laurel Tradition stand in marked contrast to the limited numbers and varieties of end scrapers in the latter complexes. Linear flakes, though reduced in frequency from the Laurel Tradition, are present in the Point Peninsula and Saugeen foci. The end-notched netsinker of the earlier portion of the Laurel Tradition may be the source of netsinkers in the Saugeen focus although the trait may also have been derived from Archaic complexes to the south along Lake Erie. Netsinkers appear to be absent from the Point Peninsula sites of southeastern Southern Ontario and are poorly represented on the New York sites. The abundant red ochre nodules of the Laurel Tradition are absent from the Saugeen focus and are poorly represented on the Point Peninsula foci sites where graphite nodules are more common. It is very probable, however, that the frequency of such traits as paintstone nodules and copper artifacts reflects the proximity of any one complex to the source of the raw material. The frequency of chipped and/or polished adzes in the Point Peninsula and Saugeen assemblages as opposed to their apparent absence in the Laurel Tradition in Ontario may indicate that the trait is an Archaic and/or Early Woodland survival in the former complexes. Many of the bone and shell and other lithic traits may have comparative significance, but larger samples are needed before they can be effectively evaluated.

The interrelationships of the Laurel and Hopewell traditions and indigenous Archaic and Early Woodland complexes in the Northeast are extremely complex with much of the complexity apparently stemming from the fluctuating relationships of the various complexes and traits in both time and space. Although the evidence is scattered and incomplete, it appears that the Point Peninsula and Saugeen foci and related assemblages are the products of an in situ development of Archaic and/or Early Woodland complexes to which have been grafted a ceramic complex and other traits that entered the area by diffusion from the Laurel and Hopewell traditions. As such, the assemblages of the various Middle Woodland sites strongly reflect both their temporal position and their geographical location with reference to the influences from the west and south, as well as the perpetuation of Archaic and Early Woodland period traits. The available evidence suggests that the Middle Woodland complex of Northern Ontario (Laurel Tradition) is the product of an occupation of the area by a cohesive culture which bears no relationship to the preceding Archaic occupation. In contrast, the Middle Woodland complexes of Southern Ontario, southern Quebec, New York, and east to the coast (Point Peninsula foci, Saugeen focus, and related complexes) are the products of an in situ development that basically stems from the Archaic

period with some Early Woodland period overtones, to which the later ceramics and other traits are grafted by adoption. Such a scheme offers a possible explanation of how two unrelated language families (Algonkian and Iroquoian) appear to have evolved from a related Middle Woodland archaeological base. It may be suggested that while ceramics have been invaluable in tracing cultural interrelationships in the Middle Woodland period they have also been responsible for creating a somewhat false impression of cultural homogeneity.

CHAPTER FOUR

Conclusions

In the introductory chapter, four hypotheses were proposed as the basic suppositions within which the Early Woodland and Middle Woodland data of the Northeast are examined. These hypotheses will now be considered individually with reference to their strengths and weaknesses.

HYPOTHESIS 1: Early Woodland ceramics were originally derived from the south and are not of Asiatic origin.

This hypothesis is inferred largely from the negative evidence to the north. The available information, which is quite considerable, strongly suggests that the Early Woodland period was quite marginal to Canada. As an integrated complex, Early Woodland appears to be absent from Ontario. Its representation in Northern Ontario is limited to a single Vinette 1 sherd at the Heron Bay site and a number of traits (tubular pipes, turkey-tail point, and so on) found with the Killarney site burials. In Southern Ontario the Vinette 1 pottery is always found in association with a Middle Woodland assemblage. Burial complexes such as Red Ochre (Ritzenthaler and Quimby, 1962) and Glacial Kame (Ritchie, 1949) found in Ontario may well be attributed to either the late Archaic or Middle Woodland periods rather than to the Early Woodland period. The association of these burial complexes with the Early Woodland period to the south does not necessarily mean that a similar association existed in Ontario, especially in the absence of Early Woodland habitation sites. It is in southern Quebec that the only single component Early Woodland village site known in Canada has been found (Levesque, Osborne, and Wright, 1964). Even at the Batiscan site, however, with its Vinette 1 and plain pottery, a single pseudo scallop shell impressed body sherd was found in direct association. This single specimen is regarded as additional evidence of the early penetration of Laurel Tradition influence to the east, an influence which, in conjunction with the Hopewell Tradition, created Southern Ontario ceramics before Early Woodland ceramics could penetrate the area as a homogeneous complex from the east. Stratified sites and sites with components segregated by isostatic rebound in Northern Ontario all demonstrate that the Laurel Tradition directly followed the Archaic period without an intervening Early Woodland period. In Manitoba also, stratified sites produce Laurel Tradition ceramics as the initial ceramic complex, and evidence of an Early Woodland occupation is totally lacking. Indeed, the peripheral position of the Early Woodland period is emphasized by the location of the only Early Woodland component in Minnesota, which is situated in the southern portion of the State (Wilford, 1954). Farther to the northwest on the arctic coasts of the Yukon (MacNeish, 1959, p. 50-51) and Alaska (Oswalt, 1955), there is no convincing evidence of Early Woodland ceramics having passed through the area from Asia. Arctic ceramics are generally estimated as being not earlier

than 1000 B.C. (Griffin, 1962). The limitations of the ceramic data from the Arctic and Asia are succinctly considered by Dr. James B. Griffin (1962, p. 160-162).

Radiocarbon estimates from the Northeast support the view that the Early Woodland period is earliest in the east and is contemporaneous, in part, with both Archaic and Middle Woodland components to the west. Table 38 presents the radiocarbon estimates for two late Archaic components in Ontario, three Early Woodland components in New York, and two Middle Woodland components in Ontario.

Table 38 — SEVEN RADIOCARBON DATES FROM THE NORTHEAST SUGGESTING THE PARTIAL CONTEMPORANEITY OF ARCHAIC, EARLY WOODLAND, AND MIDDLE WOODLAND COMPONENTS

Period	Site	Date	Catalogue
Archaic	Frank Bay	970 $\pm$ 300 B.C.	M-363
	Inverhuron	942 $\pm$ 75 B.C.	S-60
Early Woodland	Oberlander 2	998 $\pm$ 170 B.C.	C-192
	Hunter	841 $\pm$ 64 B.C.	Y-981
	Morrow	570 $\pm$ 250 B.C.	M-640
Middle Woodland	Burley	667 $\pm$ 220 B.C.	C-192
	Donaldson	530 $\pm$ 60 B.C.	S-119

The references for the New York Early Woodland components are as follows: Oberlander 2 (Ritchie, 1951); Hunter (Ritchie, 1962); and Morrow (Guthe, 1957). An earlier, controversial date from the Hunter site (Ritchie, 1955; Griffin, 1958) is rejected in favour of the date given in the table which was obtained from the same sample as the earlier estimate of 2500 $\pm$ 260 B.C. (C-794). The preceding radiocarbon estimates also throw grave doubts on the validity of the 80 $\pm$ 200 B.C. (M-428) date attributed to the Early Woodland burials of the Killarney site. Since this site contains more than one component, however, it may well be that the date pertains to a later occupation.

The evidence for the derivation of the Early Woodland pottery of the Northeast from the south is extremely tenuous and, if correct, requires the filling of many gaps as well as the tracing of certain basic changes in the ceramics as they moved north. In Georgia and Florida, however, the beginnings of the thick, fibre-tempered pottery have been radiocarbon dated at 2000 B.C., and a case for the independent invention of pottery in the southeastern United States has been made (Bullen, 1961). With the earliest dated pottery in the Northeast appearing at 1000 B.C. (an estimate which is supported by equivalent late Archaic dates) and with the absence of such pottery to the north and west, the possibility of a southern origin of the Vinette 1 pottery rather than an Asiatic source is greatly strengthened. On the basis of negative evidence from Canada, Alaska, and Siberia, and the presence of 2000 B.C. radiocarbon dates from the southeastern United States, the Vinette 1 pottery is regarded as the major addition to the

late Archaic complexes of the Northeast which transformed them into the Early Woodland period. Before the Early Woodland ceramics could penetrate to the west and north the arrival and interplay of Laurel and Hopewell ceramics had dominated the area. As a result, all of Northern Ontario, Manitoba, and the major portion of Southern Ontario and northern Minnesota possess Middle Woodland ceramics in the earliest ceramic stage. An intervening Early Woodland stage, with its thick, cord impressed pottery, appears to be absent.

HYPOTHESIS 2: The Laurel Tradition is of Asiatic origin.

The Laurel Tradition is distributed across Northern Ontario, northern Minnesota, Manitoba, and into east-central Saskatchewan. On a northwest-southeast axis this distribution entails a straight line distance of approximately 1,200 miles. Extending from the northwestern edge of this distribution, in roughly the same direction, it may be noted that the distance to the eastern tip of the Chukchi Peninsula, U.S.S.R., is 2,200 miles. This distance represents a substantial gap between the westernmost Laurel Tradition component and Asia, from where the tradition is considered to have been derived. Within the gap lie northern Saskatchewan, Alberta, British Columbia, the Yukon, the Northwest Territories, and Alaska. The northern areas of Saskatchewan, Alberta,¹ and British Columbia are, in terms of archaeological information, virtually unknown. MacNeish did not encounter pottery in southwest Yukon, and the pottery from the Firth River and Buckland Hills complexes of the Engigstciak site in the northwest Yukon (MacNeish, 1962) does not resemble Laurel ceramics. Griffin (1962, p. 161) would attribute the earliest pottery at the Engigstciak site (Firth River complex) to "an eastern relative of Norton" with an age not in excess of 1000 B.C. He also regards the dentate stamp pottery of the Buckland Hills complex as a possible source for the dentate stamp pottery of the Point Peninsula 2 focus of the Northeast. The ceramic seriations for Laurel components in Northern Ontario, however, indicate that the dentate stamp decorative technique is a minor technique in the Laurel Tradition and only achieves an appreciable representation during the later portion of the sequence. Indeed, the decorative techniques of pseudo scallop shell impressed and dragged stamp, which would be anticipated, are absent not only from the northwest Yukon but, apparently, also from Alaska. As the available ceramic evidence from the Yukon and from Alaska does not support the present hypothesis, it can only be inferred either that the pertinent materials have not been recovered or that the hypothesis under consideration is wrong. In light of the character of Arctic research, which has naturally tended until recently to concentrate on the late assemblages, and of the large areas still unexamined, it may not be presumptuous to suggest that possibly Laurel ceramics are present in the area but have not, as yet, been located.

The sole factor which gives the writer the temerity to advocate an Asiatic origin for the Laurel Tradition, despite the spatial gap in the North American distribution in excess of 2,000 miles, is the occurrence of a number of ceramic

¹An archaeological survey I made in 1964 in northern Alberta failed to produce any ceramics, and it is now felt that to the west of Saskatchewan one must move north into the forested zone of the Northwest Territories in order to find equivalent climate and geography to that of the eastern Boreal Forest.

attributes in eastern Asia. Although the evidence is both sparse and scattered, it would appear to be significant. Of great importance is the occurrence of the distinctive pseudo scallop shell technique of pottery decoration. The technique is found on early Bronze Age sites at Kullaty on the lower Lena (Okladnikov, 1955, Plate 46, figs. 5-7 and 9, p. 147) and on pottery from the Kulki River, Kamchatka Peninsula (Jochelson, 1928, Plate 19A). The recent discovery of a late Neolithic complex at Vakernaia 2 in the Chukchi Peninsula (Okladnikov and Nikrasov, 1962) adds certain data in support of the Asiatic origin of the Laurel Tradition. Vakernaia 2 produced hemispherical-shaped pottery vessels (round bottoms and insloping rims) with smooth or fabric impressed exterior surfaces decorated with horizontal bands produced by the push-pull technique with a two-pronged implement. Minority decorative techniques consist of a "single-toothed" stamp and "perhaps also a toothed wheel." Lithic remains are represented by ground slate knives including the ulu form, scrapers, a three-quarter grooved polished axe, an adze, a chopper, a multiple purpose grinding tool, a stemmed ground slate lance (?), and a biface blade. Bone artifacts are restricted to three mattocks. The preceding veneer of evidence from Asia is tantalizingly suggestive but frustratingly limited and disjointed. It is anticipated, however, that archaeological reconnaissance in northeastern Asia and northwestern North America will eventually disclose Laurel or Laurel-like ceramics if not other elements of the complex. In dealing with such a relatively unexplored area, the anticipation may not be simply the product of hopeful optimism. Prior to 1958 the Laurel Tradition was limited to a hundred-mile stretch of the International Boundary between Minnesota and Ontario, and in the succeeding five years the straight line distribution had been extended to twelve hundred miles. Blank areas on the archaeological map form ready avenues through which complexes and traits may pass in conformity with a hypothesis. The blank area under consideration, however, represents the only avenue left, in the writer's estimation, through which Laurel Tradition ceramics and, perhaps, other traits of the complex can be logically derived. Whether the ceramics and certain other traits moved along the Arctic Coast and down the west side of Hudson Bay into the Northeast, as envisioned by MacNeish, or whether they moved in a southeastern direction through the Boreal Forest, as favoured by the writer, is a matter to be determined by future research. On the basis of certain ceramic correspondences in northeastern Asia and a lithic assemblage in the Laurel Tradition that reflects northern relations, it is proposed, despite the paucity of the data, that the Laurel Tradition can only logically be derived from Asia. This proposal is made in full awareness that logic is a product of data and that the eventual proof, negation, or modification of the hypothesis rests upon data as yet unavailable.

HYPOTHESIS 3: The Hopewell Tradition is of southern derivation and not of Asiatic origin.

The proposal that many of the ceramic attributes, as well as other characteristics of the Hopewell Tradition, are ultimately southern in origin stems from a complex interblending of the negative evidence to the north and certain positive evidences to the south. It is realized that such a proposal runs contrary to the available radiocarbon esti-

mates for Hopewell/Marksville components which point to Illinois as a probable centre. On the other hand, the elaborate burial mound ceremonialism, figurines, and ear-spools possess strong southern correspondences, correspondences which are reinforced with the finding of rocker stamp, dentate stamp, incised zoning, cord wrapped paddle, and fabric impressed pottery in Middle America at a pre-Hopewell time period. The Ocós phase of the La Victoria site on the Pacific coast of Guatemala (Coe, 1960; 1961) produced the above pottery decorative techniques, as well as other techniques, in association with a highly evolved ceramic assemblage. The beginnings of the phase have been estimated at 1500 B.C., a date far earlier than the earliest estimates for the Hopewell Tradition. It is stated that "One can only conclude that either there was remarkable convergence between plastic decoration of pottery in Ocós on the one hand and Hopewell on the other, or else Hopewell was in some way influenced by Ocós-related cultures in Middle America" (Coe, 1960, p. 389). In the last analysis, however, Coe feels that "... Ocós itself represents a reworking of an even earlier Middle American complex which itself really was introduced directly from the north" (*ibid.*, p. 390).

Yet, to hypothesize a pre-Ocós, Middle American complex which was derived from the north would make requisite a time depth for ceramics which the northern data are incapable of supporting. The earliest pottery in the Northeast is not in excess of 1000 B.C., a view which is supported by a number of radiocarbon dates of less than 1000 B.C. for Archaic components in the area. If the time estimates for the Middle American ceramic attributes, which are comparable with the Hopewell Tradition ceramics, are correct, and if these ceramic attributes came to Middle America from Asia, then they must have passed through a host of preceramic assemblages to the north without leaving a trace. Of vital importance is the view that —

"Some Proto-Formative phases of South America and the Intermediate Area, all with technologically simple pottery which has been experimentally but by no means crudely decorated, have radiocarbon dates that are almost as old as the oldest ones available for pottery-making cultures in North America. Among these are Valdivia in Ecuador (2493 B.C. $\pm$ 200, 2233 B.C. $\pm$ 200, 2093 B.C. $\pm$ 200) and the Monagrillo phase of Panama (2100 B.C.), both of which certainly antedate the Ocós phase. It might be predicted that New World pottery will eventually be shown to have had multiple centres of origin: 1) a Woodland complex of northern North America, characterized by cord-marking and rocker-stamping introduced directly from Neolithic Asia, and 2) several Proto-Formative complexes, each independent of the above and of each other, arising in the southeastern United States (fiber-tempered pottery), Middle America, the Intermediate Area, and lowland South America" (Coe, 1961, p. 136).

While Coe's hypothesis of an Asiatic origin for the Woodland ceramic attributes of the Ocós phase is, in the writer's opinion, untenable for chronological reasons alone, his hypothesis of independent centres of ceramic invention in Central and South America is basic to three of the hypotheses of the present report. And, although the evidence is extremely tenuous, it is proposed that a number of the ceramic traits and certain other elements of the Hopewell Tradition originally came from the south and not from the north.

In terms of the available information on Woodland manifestations from Canada and the Northeast in general, such a hypothesis is, at the present stage of knowledge, not only conceivable but necessary.

HYPOTHESIS 4: The Point Peninsula and Saugeen foci and related foci in Canada and northeastern United States are the product of variable blending between the Asiatic-derived Laurel Tradition and the southern-derived Hopewell Tradition onto an earlier, indigenous Archaic or Early Woodland cultural base.

Since the evidence for the above hypothesis has been considered with some detail in Chapter 3, it will not be necessary to restate the supporting data. It should be emphasized, however, that the influences of the Laurel and Hopewell traditions on the earlier cultural base appear to have been realized by both direct diffusion and stimulus diffusion.

The examination of the Laurel Tradition has necessitated the formulation of four hypotheses which pose major implications bearing on the Woodland cultures of North America. It cannot be overemphasized, however, that each hypothesis is the product of both positive and negative data centred in a relatively restricted area. In order to explain logically the situation seen in the local assemblages, it has been necessary to propose sweeping movements both of complexes and of traits from the northwest and the south. The evidence for the proposed directions of complex and trait diffusion is not only tenuous but is, at times, in conflict with the information from intermediate areas. Perhaps the writer has been guilty of overspeculation on the basis of negative evidence. If this is so, then the descriptive portion of the report will represent the sole contribution to knowledge and the speculative sections will be negated or modified by future data or by a reinterpretation of the available data. Regardless of the fate of the hypotheses proposed in this report, the writer felt obligated to attempt the organization of the available evidence into a cohesive picture. Since new data acts as both the solvent and the cement of speculative reconstructions, it is anticipated that major modifications to the present preliminary scheme will be inevitable. The evidence from Canada and the northeastern United States, however, does not, in the writer's opinion, support the hypothesis of a dual diffusion of ceramics from Asia consisting of Early Woodland cord impressed wares followed by Middle Woodland dentate stamped, rocker stamped wares, etc. The ceramic assemblages of the New World would appear to be the product of a far more complex series of events.

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PLATES I – XI
LAUREL TRADITION ARTIFACTS FROM NORTHERN ONTARIO

Scale: 1/2 natural size

PLATE I

Heron Bay Site Rim Sherds

- | | |
|---------------|--|
| Figs. 1-3. | Pseudo scallop shell impressed rim sherds |
| Figs. 4-7. | Dragged stamp rim sherds |
| Figs. 8, 9. | Linear punctate rim sherds |
| Figs. 10, 11. | Dentate stamped rim sherds |
| Fig. 12. | Pseudo scallop shell impressions above linear punctate rim sherd |
| Fig. 13. | Dragged stamp above pseudo scallop shell impressions rim sherd |
| Fig. 14. | Dragged stamp above linear punctate rim sherd |
| Fig. 15. | Punctate rim sherd |
| Fig. 16. | Dentate stamped above pseudo scallop shell rim sherd |
| Fig. 17. | Pseudo scallop shell impressions above dragged stamp above linear punctate rim sherd |
| Fig. 18. | Pseudo scallop shell above punctate rim sherd |



PLATE II

Heron Bay Site Sherd Varieties

- Figs. 1-3. Dragged stamp sherds broken along the line of encircling punctates
- Figs. 4-6. Pseudo scallop shell impressed sherds broken along the line of encircling punctates. Fig. 6 has a red ochre wash on the exterior
- Fig. 7. Incised sherd broken along the line of encircling punctates
- Figs. 8-10. Pseudo scallop shell impressed sherds
- Figs. 11-13. Dragged stamp sherds
- Figs. 14, 15. Pseudo scallop shell impressed sherds with terminal decoration
- Fig. 16. Incising above dragged stamp sherd with terminal decoration

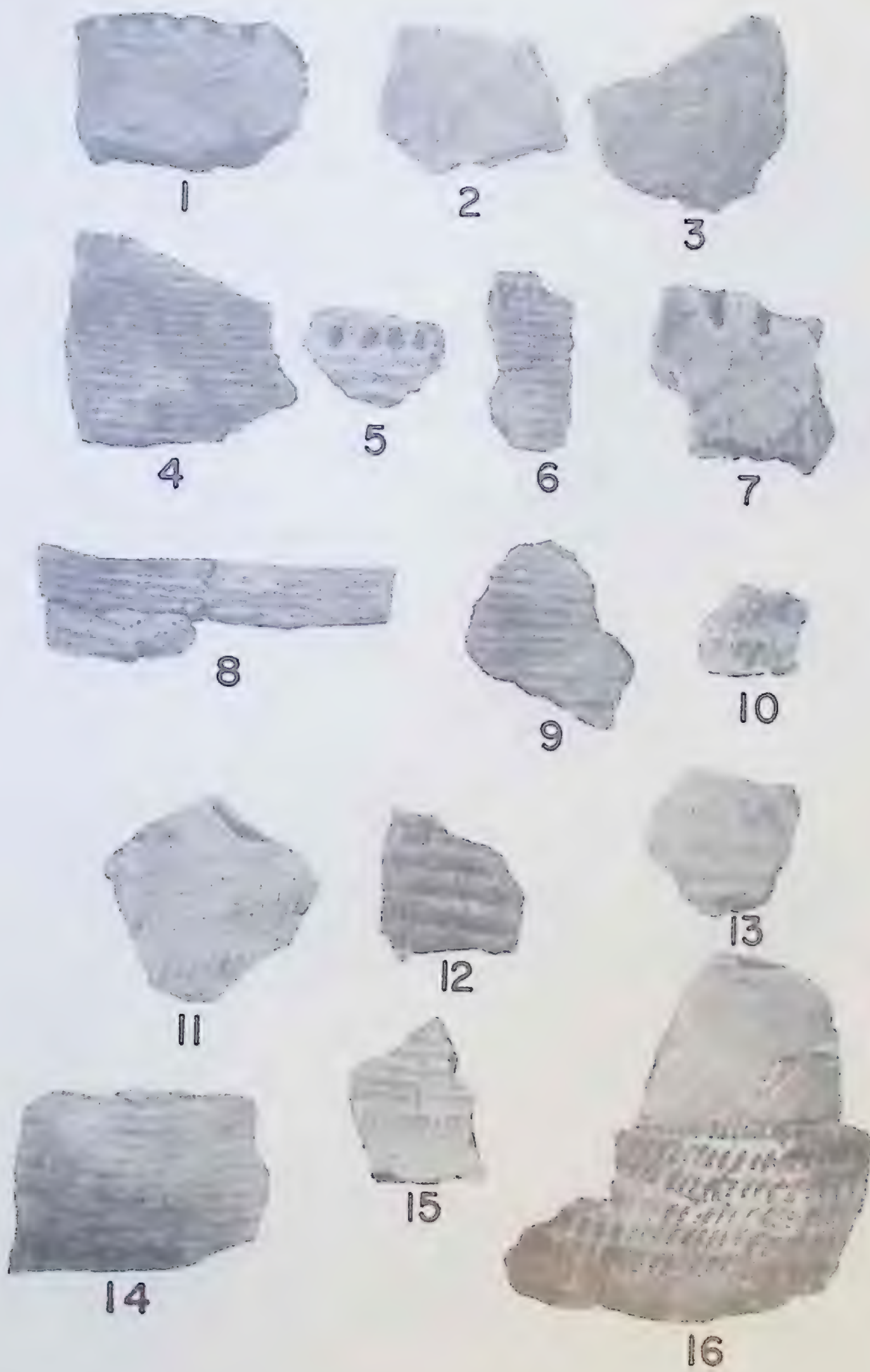


PLATE III

Heron Bay Site Sherd Varieties

- | | |
|---------------|---|
| Fig. 1. | Linear punctate sherd |
| Fig. 2. | Linear punctate sherd with terminal decoration |
| Figs. 3, 4. | Dentate stamped sherds with terminal decoration |
| Figs. 5, 6. | Punctated sherds |
| Fig. 7. | Rocker stamped sherd with terminal decoration |
| Fig. 8. | Channelled exterior sherd |
| Fig. 9. | Incised sherd |
| Fig. 10. | Vinette 1 sherd |
| Fig. 11. | Saugeen focus sherd |
| Figs. 12-15. | Juvenile ceramics |
| Figs. 16, 17. | Conical basal sherds |
| Fig. 18. | View of superior surface of a coil illustrating notches characteristic of a mortice and tenon coil juncture |

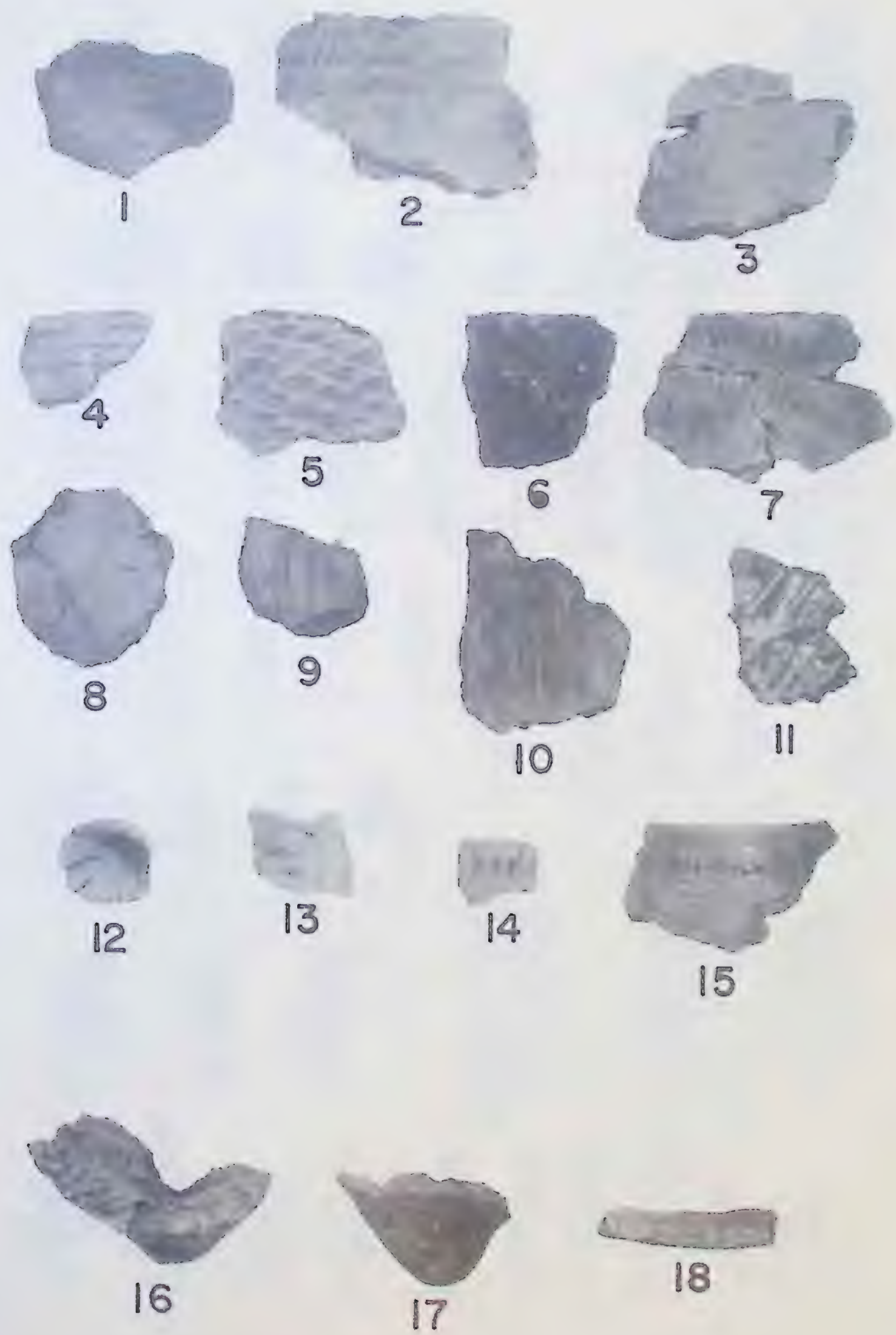


PLATE IV

Heron Bay Site Chipped Stone

- | | |
|---------------|--|
| Figs. 1-4. | Side-notched projectile points |
| Figs. 5. 6. | Side-notched lances or knives |
| Figs. 7-10. | Simple end scrapers |
| Figs. 11. 12. | Oblique end scrapers |
| Fig. 13. | Side-notched end scraper |
| Figs. 14-20. | Irregular retouch side scrapers |
| Figs. 21-26. | Continuous retouch side scrapers |
| Figs. 27-30. | Irregular and continuous retouch side scrapers |
| Figs. 31-34. | Triangular side scrapers |
| Figs. 35. 36. | Concave side scrapers |
| Fig. 37. | Crooked side scraper |
| Figs. 38-40. | Biface blades |
| Figs. 41-44. | Side-notched concave side scrapers |
| Figs. 45-52. | Linear flakes |



PLATE V

Heron Bay Site Miscellaneous Stone Artifacts

- Fig. 1. Stone gouge-like implement
- Fig. 2. Fragment of a ground slate semi-lunar blade
- Fig. 3. Slate flake with symmetrically ground knife edge
- Fig. 4. Red ochre nodules
- Fig. 5. Igneous rock spawl with retouch along one edge
- Fig. 6. Sandstone abrader
- Fig. 7. End-notched netsinker
- Fig. 8. Fire-fractured spawl with retouch and heavy battering along one edge
- Fig. 9. Linear cobble hammerstone



PLATE VI

Heron Bay Site Copper, Bone, and Shell Artifacts

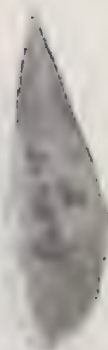
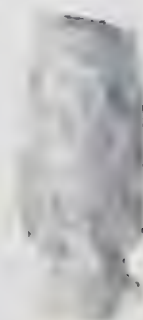
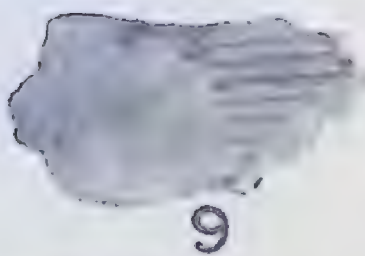
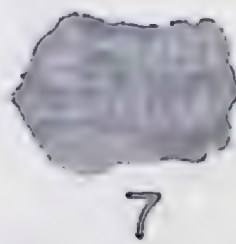
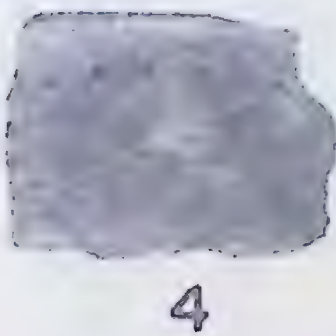
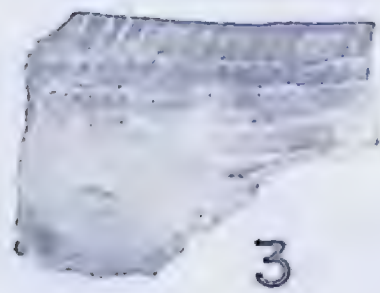
- Figs. 1-5. Copper barbs
- Fig. 6. Conical copper projectile point
- Fig. 7. Copper chisel
- Fig. 8. Copper scraper (?)
- Figs. 9, 10. Copper bangles
- Fig. 11. Copper pendant
- Figs. 12, 13. Double pointed copper awls
- Figs. 14-16. Single pointed copper awls
- Figs. 17-19. Copper bars
- Figs. 20, 21. Copper disc beads
- Figs. 22-24. Copper tubular beads
- Figs. 25, 26. Hammered copper nuggets
- Figs. 27-29. Flattened copper fragments
- Figs. 30, 31. Conical bone harpoons
- Fig. 32. Ground moose incisor
- Fig. 33. Ground moose incisor with suspension hole at root
- Fig. 34. Bone pottery marker
- Figs. 35-37. Bone awls
- Figs. 38, 39. Beaver incisor knives of the oblique variety
- Fig. 40. Beaver incisor knife of the step variety
- Fig. 41. Beaver incisor knife with grinding of the proximal and distal extremes of the lingual face
- Fig. 42. Tubular bone bead
- Figs. 43, 44. Bone netting needles
- Figs. 45, 46. Disc shell beads



PLATE VII

Pelican Falls Site Artifacts

- Fig. 1. Dragged stamp rim sherd
- Fig. 2. Pseudo scallop shell impressed rim sherd
- Fig. 3. Linear punctate rim sherd
- Fig. 4. Incised rim sherd
- Fig. 5. Pseudo scallop shell impressed rim sherd
- Fig. 6. Pseudo scallop shell impressed and dragged stamp rim sherd
- Fig. 7. Dragged stamp sherd
- Fig. 8. Linear punctate sherd
- Fig. 9. Pseudo scallop shell impressed and channelled exterior sherd
- Fig. 10. Conical basal sherd
- Fig. 11. Stemmed projectile point
- Fig. 12. Side-notched projectile point
- Fig. 13. Impressions in plasticine of dentate stamp, pseudo scallop shell, and dragged stamp all made with the adjacent edge of figure 14
- Fig. 14. Schistose pottery marker with notching along both edges
- Fig. 15. Impressions in plasticine of pseudo scallop shell made with the adjacent edge of figure 14
- Figs. 16, 17. Partially ground schistose projectile points



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PLATE VIII

Killala Lake Site and Pays Plat Site Artifacts

Killala Lake Site

- Fig. 1. Pseudo scallop shell impressed rim sherd
- Fig. 2. Linear punctate rim sherd
- Fig. 3. Plain rim sherd
- Fig. 4. Side-notched projectile point
- Fig. 5. Biface blade
- Fig. 6. Irregular and continuous retouch side scraper
- Fig. 7. Simple end scraper
- Fig. 8. Bipolar core
- Fig. 9. Unipolar core
- Fig. 10. Stemmed copper projectile point
- Fig. 11. Copper awl or barb
- Fig. 12. Bent copper bar
- Fig. 13. Simple end scraper
- Figs. 14, 15. Linear flakes

Pays Plat Site

- Fig. 16. Pseudo scallop shell impressed rim sherd
- Fig. 17. Linear punctate rim sherd
- Fig. 18. Base of side-notched projectile point
- Figs. 19, 20. Simple end scrapers
- Fig. 21. Crooked side scraper
- Fig. 22. Irregular retouch side scraper
- Fig. 23. Continuous retouch side scraper
- Fig. 24. Triangular side scraper
- Fig. 25. Bipolar core
- Fig. 26. Linear flake
- Fig. 27. End-notched netsinker
- Fig. 28. Abrader



PLATE IX

Artifacts from the Little Pic, Sand River,
Michipicoten Harbour, McLaren, and MacKenzie Sites

Little Pic Site

- Fig. 1. Dragged stamp sherd
- Fig. 2. Side-notched projectile point
- Fig. 3. Biface blade
- Fig. 4. Continuous retouch side scraper
- Fig. 5. Concave side scraper
- Fig. 6. Linear flake
- Fig. 7. Copper awl
- Fig. 8. Red ochre nodules

Sand River Site

- Fig. 9. Pseudo scallop shell impressed rim sherd
- Fig. 10. Pseudo scallop shell impressed sherd with concave exterior
- Fig. 11. Dragged stamp sherd

Michipicoten Harbour Site

- Fig. 12. Pseudo scallop shell impressed sherd
- Fig. 13. Biface blade
- Fig. 14. Simple end scraper
- Fig. 15. Sandstone abrader fragment

McLaren Site

- Figs. 16, 17. Pseudo scallop shell impressed rim sherds
- Fig. 18. Fingernail impressed rim sherd
- Fig. 19. Dragged stamp rim sherd

MacKenzie Site

- Fig. 20. Linear punctate rim sherd
- Fig. 21. Pseudo scallop shell above dragged stamp rim sherd
- Figs. 22, 23. Continuous retouch side scrapers



PLATE X

Artifacts from the Rossport, Long Sault,
Pickerel Lake, EaKa, and Lac Seul Sites

Rossport Sites

- Fig. 1. Dragged stamp rim sherd
- Fig. 2. Sandstone abrader
- Fig. 3. Simple end scraper
- Fig. 4. Oblique end scraper
- Fig. 5. Base of a biface blade

Long Sault Site

- Fig. 6. Pseudo scallop shell impressed rim sherd
- Fig. 7. Dragged stamp sherd
- Fig. 8. Pseudo scallop shell impressed sherd
- Fig. 9. Pseudo scallop shell impressed sherd with concave exterior
- Fig. 10. Simple end scraper
- Fig. 11. Incipiently side-notched projectile point

Pickerel Lake Site

- Fig. 12. Linear stamped rim sherd
- Fig. 13. Linear punctate rim sherd

EaKa Sites

- Fig. 14. Pseudo scallop shell impressed rim sherd (EaKa - 3)
- Fig. 15. Plain rim sherd (EaKa - 6)

Lac Seul Site

- Fig. 16. Pseudo scallop shell impressed rim sherd
- Fig. 17. Fingernail impressed rim sherd
- Fig. 18. Pseudo scallop shell impressed rim sherd



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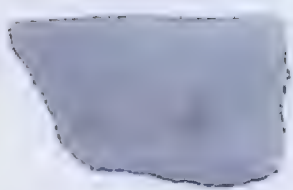
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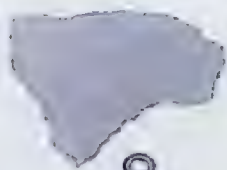
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PLATE XI

Laurel Burial Mound on the Long Sault Site



PLATES XII, XIII

POINT PENINSULA FOCI ARTIFACTS FROM SOUTHERN ONTARIO

Scale: 1/2 natural size

PLATE XII

Point Peninsula Foci Ceramics

- Fig. 1. Interior of a Vinette 1 rim sherd (Ault Park site)
- Fig. 2. Plain rim sherd (Ault Park site)
- Fig. 3. Dragged stamp rim sherd (Plum Point site)
- Fig. 4. Dentate stamped rim sherd (Plum Point site)
- Fig. 5. Pseudo scallop shell impressed rim sherd (Plum Point site)
- Fig. 6. Linear punctate rim sherd (Plum Point site)
- Fig. 7. Dragged stamp rim sherd (Parker site)
- Fig. 8. Dentate stamped, collared rim sherd with an encircling row of exterior punctates which raise interior bosses (Point Buisson site)
- Fig. 9. Pseudo scallop shell impressed rim sherd (Parker site)
- Fig. 10. Body sherd with dragged stamp and pseudo scallop shell impressions (Parker site)
- Fig. 11. Body sherd with dragged stamp impressions (Plum Point site)
- Fig. 12. Interior channelling on a sherd (Parker site)
- Fig. 13. Body sherd with rocker stamping (Parker site)
- Fig. 14. Body sherd with dragged stamp impressions (Kant site)
- Fig. 15. Body sherd with rocker stamping (Kant site)

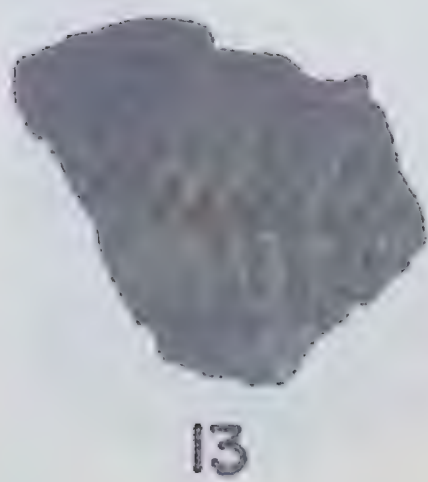
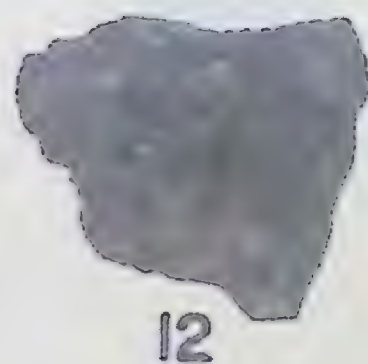


PLATE XIII

Point Peninsula Foci Miscellaneous Artifacts

- Fig. 1. Stemmed projectile point (Ault Park site)
- Fig. 2. Stemmed projectile point (Kant site)
- Fig. 3. Side-notched projectile point (Kant site)
- Fig. 4. Stemmed projectile point (Kant site)
- Fig. 5. Corner-notched projectile point (Parker site)
- Fig. 6. Large end scraper (Ault Park site)
- Fig. 7. End scraper (Ault Park site)
- Fig. 8. Copper fish-hook (Kant site)
- Fig. 9. Steatite pottery marker (Brophy's Point site)
- Fig. 10. Impressions made with Fig. 9. From left to right – dentate stamp, pseudo scallop shell, and dragged stamp
- Fig. 11. Biface blade (Kant site)
- Fig. 12. Obliquely ground beaver incisors (Parker site)
- Fig. 13. Bilaterally barbed harpoon fragment (Brophy's Point site)
- Fig. 14. Polished stone adze (Kant site)
- Fig. 15. Steatite platform pipe with stem missing (Middlesex County)



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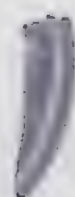
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PLATES XIV, XV
SAUGEEN FOCUS ARTIFACTS FROM SOUTHERN ONTARIO
Scale: ½ natural size

PLATE XIV

Saugeen Focus Ceramics (Donaldson Site)

- Fig. 1. Dentate stamped rim sherd
- Figs. 2, 3. Pseudo scallop shell impressed rim sherds
- Fig. 4. Rocker stamped rim sherd
- Fig. 5. Incised rim sherd
- Fig. 6. Rim sherd with annular punctates
- Fig. 7. Dentate stamped rim sherd with applied, truncated lug
- Fig. 8. Body sherd with curvilinear incising and dentate stamp
(impression outlined in ink for illustration purposes)
- Fig. 9. Dentate stamped body sherd
- Fig. 10. Pseudo scallop shell impressed body sherd with super-
imposed incising
- Fig. 11. Rocker stamped body sherd
- Fig. 12. Pseudo scallop shell impressed body sherd
- Fig. 13. Interior channelling on a body sherd



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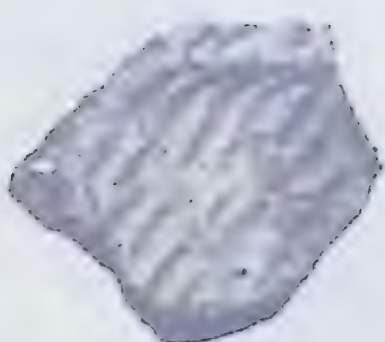
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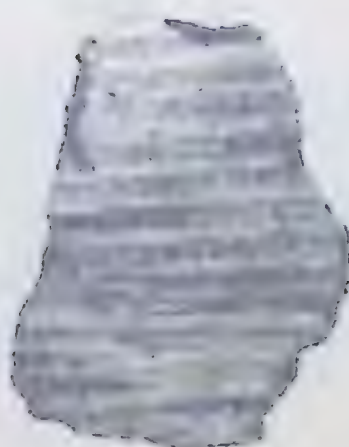
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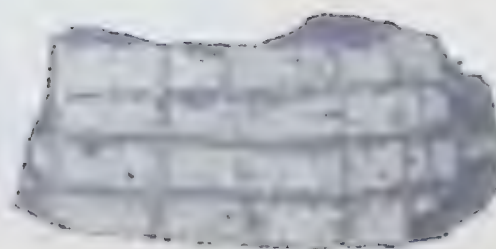
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PLATE XV

Saugeen Focus Miscellaneous Artifacts (Donaldson Site)

- Fig. 1. Adena type projectile point
- Fig. 2. Side-notched projectile point
- Fig. 3. Trianguloid projectile point
- Figs. 4, 5. End scrapers
- Fig. 6. Linear flake
- Fig. 7. Copper and marginella beads from graves
- Fig. 8. Ground bear canine pendant from grave
- Fig. 9. Beaver incisor slightly ground at bit edge
- Fig. 10. Ground slate gorget fragment
- Fig. 11. End-notched netsinker
- Fig. 12. Unfinished birdstone
- Fig. 13. Cobble spawl with retouched edges
- Fig. 14. Pecked and flaked adze
- Fig. 15. Slate chopper



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FOR REFERENCE

NOT TO BE TAKEN FROM THIS ROOM

NOT TO BE TAKEN FROM THIS ROOM

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MA82^r.8C21b

Binding 1968

[illegible]

